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RINCON POINT-SOUTH BEACH REDEVELOPMENT PLAN

SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

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DRAFT EIR PUBLICATION DATE: FEBRUARY 7, 1991
DRAFT EIR PUBLIC HEARING DATE: MARCH 14, 1991
DRAFT EIR PUBLIC COMMENT PERIOD: FEBRUARY 8, 1991 TO MARCH 25, 1991

WRITTEN COMMENTS SHOULD BE SENT TOM CONRAD, CHIEF, REDEVELOPMENT AGENCY, 770 GOLDEN GATE AVENUE, SAN FRANCISCO, CA 94102

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DATE: February 7, 1991

TO: Distribution List for the Rincon Point-South Beach Redevelopment Draft Supplemental EIR

FROM: Barbara W. Sahm, Environmental Review Officer

SUBJECT: Request for the Final Supplemental Environmental Impact Report for the Rincon Point-South Beach Redevelopment Plan

This is the Draft of the Supplemental Environmental Impact Report for the Rincon Point-South Beach Redevelopment Plan. A public hearing will be held on the adequacy and accuracy of this document. After the public hearing, staffs from the Redevelopment Agency and the Department of City Planning will prepare and publish a document titled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft SEIR and our responses to those comments. It may also specify changes to this Draft SEIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with notice of the date reserved for certification; others may receive such copies and notice on request or by visiting our office. This Draft SEIR together with the Summary of Comments and Responses document will be considered by the City Planning Commission and the Redevelopment Agency Commission in an advertised public meeting and certified as a Final SEIR.

After certification, we will modify the Draft SEIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Supplemental Environmental Impact Report. The Final SEIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft SEIR, you will technically have a copy of the Final SEIR.

We are aware that many people who receive the Draft SEIR and Summary of Comments have no interest in receiving virtually the same information after the SEIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final SEIR to private individuals only if they request them.

If you want a copy of the Final SEIR, please so indicate in the space provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the SEIR. Any private party not requesting a Final SEIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final SEIR.

Thank you for your interest in this project.

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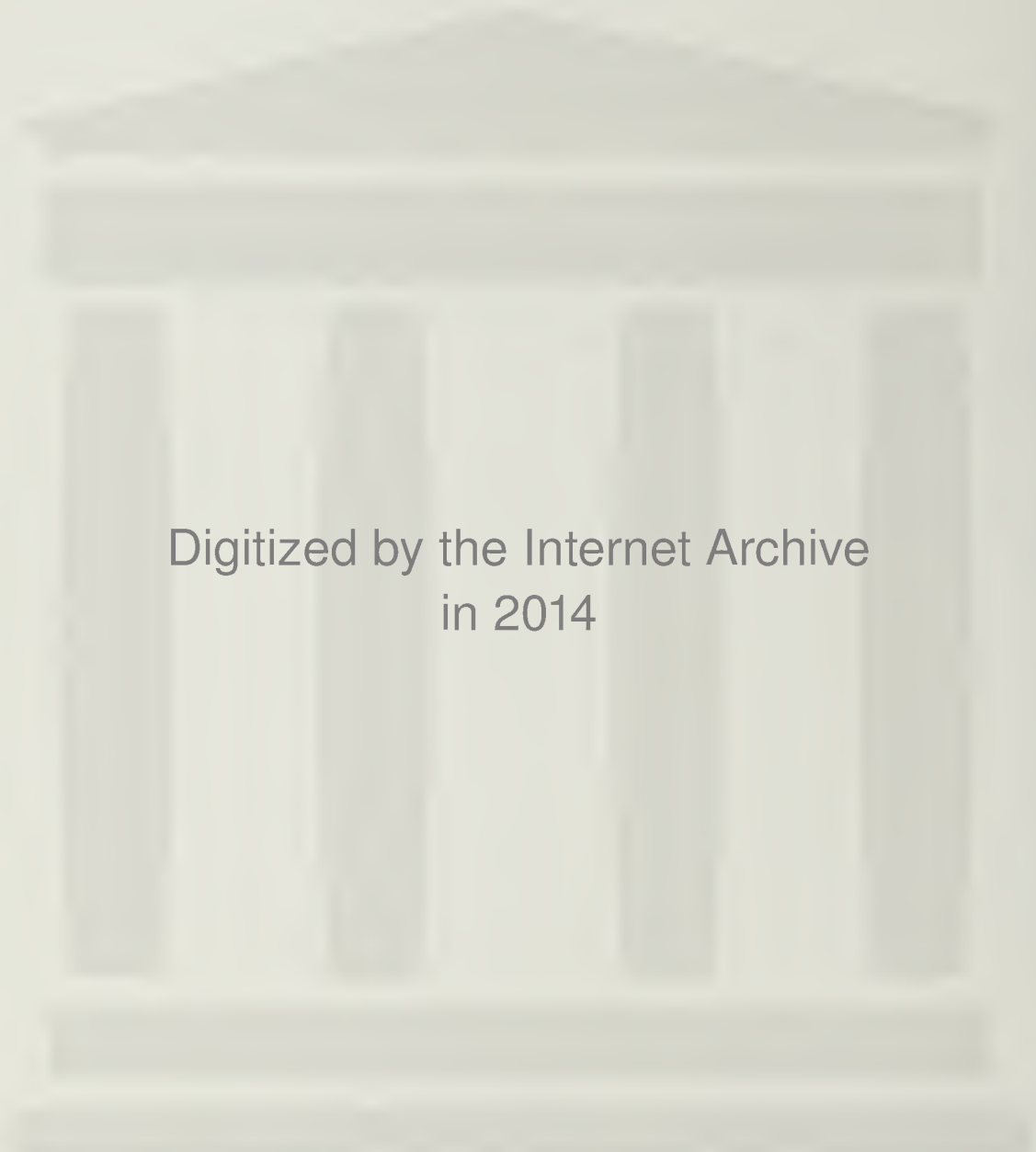

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EIR AUTHORS AND CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED

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I. SUMMARY

A. PROJECT DESCRIPTION

The Rincon Point-South Beach Redevelopment Area is located on the northeastern waterfront of the City and County of San Francisco, generally within a 1,000-foot-wide strip of land adjacent to the Bay and bounded by Mission Street to the north and China Basin to the south. The Redevelopment Area consists of two discrete geographic sub-areas, the Rincon Point sub-area and the South Beach sub-area. The 1980 Rincon Point-South Beach Redevelopment Plan identifies 14 separate development sites within the Redevelopment Area and designates permitted land uses and height limits for each.

The proposed project is an amendment to the 1980 Rincon Point-South Beach Redevelopment Plan that would change the land use designation of four development sites within the Redevelopment Area, including Sites C, D, I and N, and would increase the height limit on Site I. The proposed Plan Amendment would allow alternative uses, as designated in the 1980 Redevelopment Plan, to be combined on the same parcel. The proposed Plan Amendment would also permit the Redevelopment Agency, on a short-term basis, to lease any of its property that has not been redeveloped for uses that are not in conformance with the adopted Redevelopment Plan, including temporary public storage buildings, storage within existing buildings, and construction staging and parking areas.

The base case against which the proposed Plan Amendment impacts are measured is the January 1990 existing condition.

B. ENVIRONMENTAL IMPACTS

1. LAND USE AND ZONING

The proposed Redevelopment Plan Amendment would result in a change in the land use designation of four development sites, including Sites C-1, D, I, and N, and would change the height limit on Site I from 105 to 160 feet. Under the Amended Plan, alternate uses as designated would be allowed to be combined on the same site, and the Redevelopment Agency would be permitted, on a short-term basis, to lease any of its property that has not been redeveloped for uses that are not in conformance with the adopted Redevelopment Plan, including temporary public storage buildings, storage within existing buildings, and use of existing parking or vacant lots for construction staging and parking areas.

Build-out of the proposed Plan Amendment would result in a net increase of about 1,170 to 1,290 new housing units, 87,000 to 244,500 gross square feet (gsf) of retail space, about 488,000 gsf of office space, and about 32,000 gsf of marine support space; and would result in a net decrease of about 530,000 gsf of industrial space and 250,000 gsf of surface parking area.

2. POPULATION, HOUSING AND EMPLOYMENT

Full development allowed under the proposed Plan Amendment would result in the addition of between 1,170 and 1,290 housing units. The Agency's stated goal is for 20% of the new units to be made up of subsidized low-income housing and 30% to be made up of assisted moderate-income housing. Development allowed under the proposed Plan Amendment would result in the addition of about 1,870 to 2,065 net new residents within the Redevelopment Area.

Build-out under the proposed Plan Amendment would result in the net addition of up to 2,010 jobs. About 110 existing industrial jobs would leave the area. Some of the light industrial firms would relocate within the City or the Bay Area; some could choose to go out of business. There are also about 210 office employees and about 240 retail employees working for firms currently located on sites that would be redeveloped under the proposed Plan Amendment. These existing firms would relocate within the City or the Bay Area and it is possible that they would relocate within new space in the Redevelopment Area. Eligible business concerns displaced by redevelopment would receive relocation assistance and benefits.

3. TRANSPORTATION

In the immediate vicinity of the four development sites being analyzed in this report, 16 intersections were selected for analysis of potential traffic impacts. All 16 intersections operate acceptably today (Level of Service "C" or better). All study intersections would still operate at an acceptable level of service (LOS "C" or better) if the project were added to existing traffic conditions. Background traffic growth between 1989 and 2000, the estimated year of project completion, would result in level of service changes at some of the subject intersections. However, these intersections would continue to operate at LOS "D" or better with cumulative 2000 traffic growth including the project.

The project sites are well-served by both local and regional transit carriers, including MUNI bus lines, MUNI Metro and BART. In the future, service would be enhanced with extensions planned for the MUNI Metro system. The proposed uses for the four sites would generate 3,067 P.M. peak-hour person trips. During the P.M. peak hour, the proposed project would generate an estimated 670 auto driver vehicle trips. The additional vehicle trips would have their greatest impact at Brannan Street/The Embarcadero (where the volume-to-capacity ratio would change by 0.09 from 0.57 to 0.66, and the level of service would change from "A" to "B") and at Broadway/The Embarcadero (where the volume-to-capacity ratio would change by 0.07 from 0.74 to 0.81, and the level of service would change from "C" to "D"). The additional transit ridership generated by the project sites would fall within the daily variation in ridership on transit lines serving the four sites, but would contribute to an overall increase in cumulative conditions that increase load factors on transit lines.

Pedestrian conditions in the project vicinity are at level of service "A" at all times of the day and would not be noticeably impacted by the addition of the proposed project's pedestrian traffic.

The proposed Plan Amendment would eliminate some existing parking areas used mainly as public parking. Currently, on-street and off-street parking are well-used in the study area throughout the day, with over 90% of the spaces occupied. The off-street parking is 95% occupied at Site C and fully occupied at Sites D and N. With the proposed project, parking demand would exceed the parking supply at Sites C and D. Additionally, over 400 existing off-street parking spaces would

be removed by the project. Parking mitigation measures are presented to provide additional parking and other transportation management programs.

Although site plans have not been prepared for the four project sites, recommendations have been included in Chapter V, Mitigation Measures, regarding vehicular access and service/delivery truck access.

4. GEOLOGY AND SEISMICITY

Only a minor amount of alteration to surface topography would occur because the sites already contain structures that would be renovated or replaced by the project. To the extent that excavation extended below existing slabs-on-grade, spoils would need to be transported off-site for disposal and/or recompacted as engineered backfill beneath the slabs-on-grade of the proposed project structures.

Total and differential settlement would occur whenever structures were supported directly on fill over Bay mud. The amounts and rates of settlement would depend on preconsolidation of the fill and mud, rate of loading, amount of loading, and respective depth of the fill and mud.

Potential seismic-related impacts include groundshaking and ground failure. Ground failures include seismically induced liquefaction, subsidence, and lateral spreading. Liquefaction can occur in loose, saturated fill when seismic vibration increases water pore pressure to such an extent that the "solid" fill reacts like a liquid ("quick sand"). The resultant loss of soil support for foundations can cause buildings to sink, overturn or collapse. Subsidence of loose fills or sands occurs when seismic vibration shakes the particles into a more densely packed configuration (the same number of particles take up less space). Loss of soil support for foundations can result. Lateral spreading can occur in liquefied fills as the soils flow away from beneath the load imposed by the foundations supported on the fill. It can also occur in Bay mud as it shifts in response to seismic vibration. Loss of soil support for foundations can result.

Excavation for the project foundations basement levels conducted to depths greater than about 0 feet San Francisco Datum (SFD) would reach below the existing groundwater table and possibly below the basement slab level of adjacent buildings. Pile foundations would probably be necessary

because the fill and Bay mud layers would not provide reliable support for structures during earthquake conditions. End-bearing support or frictional support pile design would reduce anticipated settlement and provide seismic support. Predrilling to within several feet of design depth would probably be necessary.

Dewatering would be necessary during excavation below the water table. Dewatering could cause some settlement of nearby buildings.

5. HYDROLOGY AND WATER QUALITY

Development allowed under the proposed Plan Amendment would not have a measurable effect on the volume of water leaving the site as runoff. There would be no impact from seismic sea waves.

The quality of surface runoff could be degraded as a result of construction on development sites; however, given the limited area in which excavation would occur, it would be possible to control erosion and sediment transport impacts on-site.

The quality of the surface runoff entering the storm/sewer system would also be altered slightly by the contaminant load associated with development allowed under the proposed Plan Amendment. The types of contaminants entering the drainage system would remain substantially the same, although the ratios of particular materials in the contaminant load may vary and the total volume of the load may increase slightly if presently pervious areas are paved. This increase would contribute to cumulative degradation of the quality of the water carried and treated by the system; however, the exact amount of each contaminant generated by development under the proposed Plan Amendment would be too low to be considered significant in itself.

Excavation for the construction of sublevels for parking, or of drive pits for foundations, would involve excavation near, or below, the water table. Dewatering of some of the sites would be necessary.

6. AIR QUALITY

Upon completion, development allowed under the proposed Plan Amendment would affect air quality in two ways. Emissions would be generated by project-related traffic, and by combustion of natural gas for building space and water heating. Transportation sources would account for the predominant project-related emissions.

Emissions from traffic generated by development allowed under the proposed Plan Amendment for the year 2000 would exceed the threshold criteria of significance as defined in the BAAQMD's Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plans (hereafter referred to as the Guidelines). As defined in the Guidelines, projects that emit in excess of 0.075 tons of NO_x on a daily basis would have a significant impact. NO_x emitted by the project in the year 2000 would be 0.09 tons/day and therefore would be significant. Emissions of hydrocarbons from traffic generated by the proposed project would not exceed the threshold of significance defined in the Guidelines. Neither NO_x or hydrocarbons emissions from traffic generated by the proposed project would exceed one percent of the total emissions in the City for the year 2000.

Particulates emitted and entrained from traffic generated by the proposed project for the year 2000 would have a significant impact. The threshold criteria of significance defined in the Guidelines for particulates is set at 0.075 tons/day. Particulates emitted and entrained by traffic in the year 2000 is estimated to be 0.17 tons/day.

Sulfur oxides emitted by traffic generated by the proposed project would not exceed the daily tons/day or the one percent of total county emissions threshold criteria of significance as defined in the Guidelines.

7. NOISE

Site C would have its land use redesignated to include office use. The office proposed on Site C would appear to be compatible with the on-site noise environment, although noise measurements should be conducted to determine the exposure of the facades facing the Embarcadero Freeway if/when the freeway is reopened and the site plan for development is submitted.

Site D would be redesignated to include residential development. The City and County of San Francisco's Land Use Compatibility Guidelines indicate that residential developments located where the L_{dn} exceeds 60 dB should be discouraged. The primary reason for this is that is difficult to provide any outdoor areas with an acceptable noise environment. Given the fact that the Bay Bridge looms above this site, it would be essentially impossible to shield outdoor areas to an L_{dn} of less than 60 dB which is considered an appropriate level for outdoor use areas. If, however, this is primarily an apartment type use with an indoor orientation, residential uses could be developed to provide an acceptable interior noise environment.

The State of California requires that the interior level in new multifamily dwellings not exceed an L_{dn} of 45 dB. This would require about 30 dB of noise reduction, which could be achieved through the use of sound-rated glass. The interior standard would only be met when the windows are closed.

Site I would include commercial and residential development. The L_{dn} at the back of the sidewalk, which is typical of where a building would be located, is 69 dB. According to the City and County of San Francisco Land Use Compatibility Guidelines, commercial uses would be considered compatible without any special noise insulation requirements. Apartment-type residential use could be developed to provide an acceptable interior noise environment.

Site N would be redesignated to permit commercial use. The L_{dn} at 50 feet from the center of the nearest lane, typical of building setbacks along the Embarcadero is 73 dB. Commercial uses would be considered compatible in this noise environment only if needed noise insulation features were included in the design.

Development on these sites would generate noise in two ways. The mechanical equipment associated with the buildings would potentially increase noise levels in the area, and the traffic generated by the project would potentially increase noise levels on the street serving the site.

During construction on any of these sites noise levels would be temporarily elevated. The actual impact on a given land use would depend upon the building type, construction materials and the type of construction. These issues would need to be discussed as each project is proposed.

8. TOXIC AND HAZARDOUS MATERIALS

A number of industries historically present in the Redevelopment Area could have used, generated, or otherwise been involved with hazardous materials, including major industries involved with petroleum processing storage, paint products, ship building, and railroad facilities. In addition, a variety of minor industries that may have used, produced, or stored smaller quantities of hazardous materials were active in the Redevelopment Area.

With the exception of Site K, soils in the Redevelopment Area have not yet been sampled or analyzed. Until the Redevelopment Area parcels are sampled, the presence of dispersed toxic materials at concentrations that exceed State or federal standards cannot be confirmed. Because of gaps in the historical record and the possibility of dumping, the lack of a known historic industrial or rail use on a parcel should not be taken to imply that the parcel is uncontaminated.

Throughout the redevelopment period, hazardous contaminants could be encountered during excavation and site preparation if the parcels to be developed have not been properly surveyed for hazardous materials and cleaned up before construction commences. Undetected contaminants could also pose health risks for future occupants of the Project Area.

Many parcels within the Redevelopment Area have had multiple industrial uses and could be contaminated with multiple hazardous substances. To comply with Article 20 (San Francisco's Hazardous Soils Ordinance) the soil throughout the Redevelopment Area would have to be tested prior to developing any parcel, since the land use history of the Redevelopment Area indicates a high potential for hazardous material contaminants. The actual investigative and, if necessary, remediation methods would comply with Article 20 requirements. Site investigation and clean-up would be carried out on a parcel-by-parcel basis as a result of individual development proposals as redevelopment proceeded.

Before development can take place on Site K, an Article 20 Site Mitigation Plan will be developed for the hazardous wastes that were found on the site in excess of established quantitative standards.

Toxic hazardous materials pose the most serious concern for health-related impacts within the Redevelopment Area. If not located and treated or removed, these toxic substances could pose

long-term health hazards to cleanup crews and construction workers, as well as future residents, workers, and visitors. The most hazard-sensitive land uses included in the proposed Amended Redevelopment Plan would be open space and residential areas. Commercial and industrial land uses would be less sensitive to the presence of hazardous waste contamination.

Cleanup of any hazardous materials found in the Redevelopment Area would itself carry some potential for public health impacts. Those impacts would depend to a large extent on the nature and amounts of material encountered, and the period during which cleanup were to take place. Cleanup crews and transportation workers could face direct hazards. Cleanup would pose indirect hazards to nearby residents, businesses, visitors, wildlife, and others that might come in contact with fugitive materials at or near the cleanup site, or in transit. Without cleanup, however, existing risks to public health posed by hazardous materials would remain indefinitely.

9. HISTORIC AND ARCHAEOLOGICAL RESOURCES

There would be no project impacts on any known cultural resources from the proposed project. However, it is possible that during the course of excavation for the development allowed under the proposed Amended Redevelopment Plan, cultural resources of significance may be encountered, such as a Chinese fishing village thought to be in the area of First Street between Bryant and Brannan Streets, or buried ships.

The Oriental Warehouse, under the proposed project, would retain only its outer walls; this would constitute an impact on the Oriental Warehouse. There would be considerable change to the Warehouse due to loss of all the interior wood truss and floor planking. One of the last examples in the Bay Area of this style and type of interior structure would be lost.

10. GROWTH INDUCEMENT

Development allowed under the proposed Amended Plan would accommodate growth of business activity/employment and housing/population in the Rincon Point-South Beach Redevelopment Area. It would add about 488,000 gsf of net new office space, up to 244,500 gsf of commercial retail space, 32,000 gsf of marine-support space, and up to 1,290 housing units.

Employment within the Redevelopment Area would increase by about 2,053 people to total 3,643 employees. Occupants of the proposed buildings are not known, but could include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. The increase in employment within the Redevelopment Area, therefore, would not necessarily represent employment that is new to San Francisco. If the space were fully leased, however, and the office space of the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would increase by about 2,053 jobs due to development allowed under the proposed Redevelopment Plan Amendment. Additional jobs would also be supported indirectly in San Francisco through the multiplier effect.

If marketed successfully, office space allowed under the proposed Plan Amendment, together with other planned office development, could have growth-inducing effects by demonstrating a market for office space in this area. This could thereby encourage similar developments on lots (including smaller lots assembled for development) currently occupied by low-rise or mid-rise buildings containing support services.

Any net increases in employment downtown would increase the demand for retail goods and services in the area. Development allowed under the Amended Redevelopment Plan would intensify this demand by increasing the amount of employment in the area.

Increases in employment in the Redevelopment Area would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. Business service firms with expanded markets would increase demand for existing space and possibly for further new development.

As noted above, the Amended Redevelopment Plan would allow for the development of up to 1,290 housing units. Similar to office space, if marketed successfully, housing allowed under the Plan together with other planned development, could have growth-inducing effects by demonstrating a market for housing in this area. Some gentrification has already occurred in areas surrounding the Redevelopment Area, particularly in the South Park neighborhood. Development allowed under the Amended Redevelopment Plan would continue this trend.

12. SHADOWS

Some existing buildings would cast shadows on the two open space areas in the proposed redevelopment project (Sites C and M). The open space on Site C would probably have more shadows cast on it than the open space located on Site M, across the Embarcadero from the South Beach Marina, due to the difference in height limits and the current number of buildings occupying areas in the vicinity of the proposed project.

The proposed height limit increases on Sites I-1 and I-3 would allow a structure to be built on the sites that would increase shadow effects; these new shadows would reach any public open space.

Proposition K, the Park Shadow Ban, prohibits the issuance of building permits for structures that would shade property under the jurisdiction of the Recreation and Park Commission. The project area is under the jurisdiction of the Redevelopment Agency, not the Recreation and Park Commission, and is outside the Downtown Plan area. Consequently, the project site does not come under the provisions of either the Downtown Plan or Proposition K relative to shadow policy. Shadow analysis will be performed on specific building designs proposed for the Redevelopment Area.

C. ALTERNATIVES

1. ALTERNATIVE A: NO DEVELOPMENT

This alternative would entail no change in existing land uses within the Redevelopment Area. Other than cumulative impacts, none of the impacts associated with development allowed under the proposed Plan Amendment would occur.

2. ALTERNATIVE B: NO CHANGE TO 1980 REDEVELOPMENT PLAN

This alternative would entail no amendment to the 1980 Redevelopment Plan. Sites C-1, D, I and N would retain their existing land use designations and height limits; these and all undeveloped sites would be developed as designated in the adopted Plan.

Alternative B would result in a decrease of about 180 to 420 housing units and about 500,000 gsf of office space, and an increase of about 800 hotel rooms, about 85,500-153,000 gsf of retail/service

Alternative B would result in a decrease of about 180 to 420 housing units and about 500,000 gsf of office space, and an increase of about 800 hotel rooms, about 85,500-153,000 gsf of retail/service space, and 34,500 gsf of marine-support space, compared to the proposed Plan Amendment. Alternative B would result in about 740-930 fewer employees.

Alternative B would generate more daily and P.M. peak-hour person trips, but fewer vehicle and transit trips than the proposed Plan Amendment. Alternative B would generate more pedestrian trips. Traffic conditions at the study area intersections would be very similar under both Alternative B and the proposed Plan Amendment. Alternative B would generate more parking demand.

Alternative B would have no adverse impact on historic and cultural resources. Other impacts of Alternative B would be similar to those described for the proposed Plan Amendment.

3. ALTERNATIVE C: CHANGE IN LAND USE DESIGNATION OF SITES C-1 AND D

Alternative C includes the change in land use designation of only two sites, C-1 and D, as described in the proposed Plan Amendment. All other sites would be developed according to their designation in the 1980 Redevelopment Plan.

Alternative C would result in a net decrease of about 290 housing units, and an increase of about 14,500 gsf of retail commercial space and about 34,500 gsf of marine support space. Alternative C would result in a net increase of 137 employees. Overall, Transportation impacts of Alternative C would be slightly less than those of the proposed Plan Amendment. Other impacts would be similar to those identified for the proposed Plan Amendment.

II. PROJECT DESCRIPTION

GENERAL BACKGROUND

In 1977, the Board of Supervisors of the City and County of San Francisco authorized the preparation of a survey to investigate different methods of revitalizing the Northeastern Waterfront area of San Francisco. The survey was an undertaking by several concerned agencies; their recommendations for improving the Northeastern Waterfront area appeared in the 1979 Northeastern Waterfront Survey (NEWS) Technical Report. In response to that survey and its recommendations, the City Planning Commission selected the project area and approved the preliminary plan, and the San Francisco Redevelopment Agency prepared the Rincon Point-South Beach Redevelopment Plan, adopted and approved by the San Francisco Board of Supervisors in January 1981. An Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was prepared for the Redevelopment Plan and certified on November 5, 1980.

1980 Rincon Point-South Beach Redevelopment Plan

The stated objectives of the adopted Rincon Point-South Beach Redevelopment Plan are as follows:

1. Remove structurally substandard buildings, eliminate blighting influences, remove impediments to land development, and achieve changes in land use.

2. Stimulate and attract private investment, thereby improving the City's economic health, tax base, and employment opportunities.

3. Provide for the creation of two major waterfront parks.

4. Provide for job opportunities through economic development improvements, including neighborhood commercial facilities, a small-boat harbor, a hotel complex, and the restoration and adaptive re-use of certain structures.

5. Provide for or facilitate the partial re-routing and the overall improvement of the Embarcadero Roadway into a boulevard, including a new mass transit line.

6. Assist in the suitable reestablishment of businesses and residents which will be displaced by the Project.

7. Encourage use of the most cost-effective energy efficient measures feasible.

8. Provide for the development of mixed-income housing.

The Plan states that the project area shall be redeveloped in accordance with the text and maps contained within the Redevelopment Plan and with the accompanying document entitled Design for Development.

LOCATION

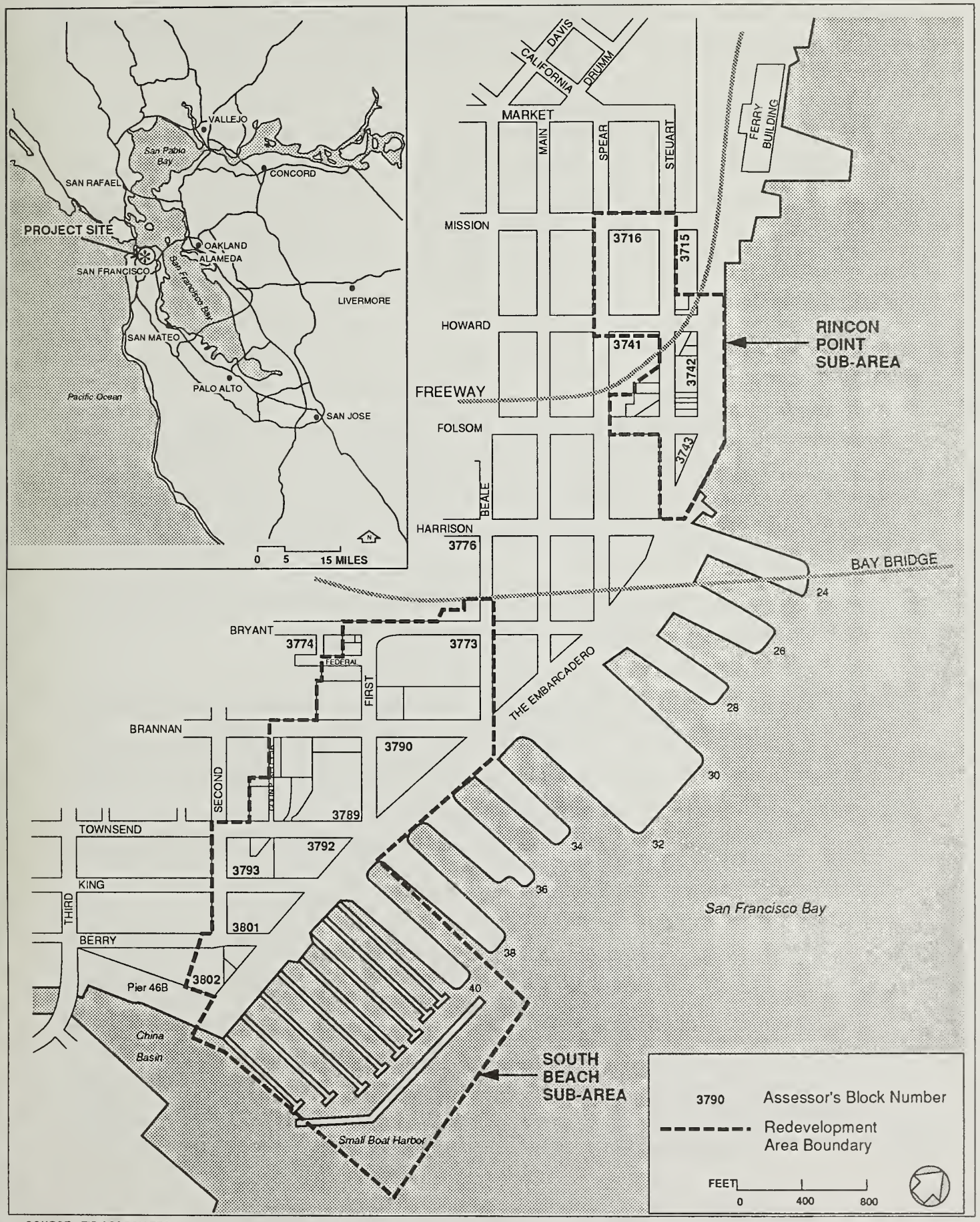
The Rincon Point-South Beach Redevelopment Area is located on the northeastern waterfront of the City and County of San Francisco, generally within a 1,000-foot-wide strip of land adjacent to the Bay and bounded by Mission Street to the north and China Basin to the south (see Figure 1, page 15). The Rincon Point-South Beach Redevelopment area consists of two discrete geographic sub-areas of the larger Northeastern Waterfront Survey area, which was examined in the 1979 Northeastern Waterfront Survey Technical Report.

The Rincon Point sub-area contains 19.2 acres generally bounded by The Embarcadero from Harrison Street to a point a few hundred feet north of Howard Street; Steuart Street between Howard and Harrison Streets; the Rincon Annex block bounded by Mission, Howard, Spear and Steuart Streets; and the area bounded by the Embarcadero Freeway, Spear, Folsom and Steuart Streets.

The South Beach sub-area contains 95.8 acres generally bounded by The Embarcadero from First to Beale Streets; Beale Street from The Embarcadero to Bryant Street; Bryant Street from Beale to First Streets; easterly portions of the block fronting First Street from Bryant to Brannan Streets; Brannan Street from First to Colin P. Kelly Jr. Streets; Colin P. Kelly Jr. Street and some frontage properties from Brannan to Townsend Streets; Townsend Street from Colin P. Kelly

SITE LOCATION MAP

FIGURE 1



SOURCE: EIP ASSOCIATES

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Jr. to Second Streets; Second Street from Townsend to Berry Streets; and Berry Street from Second Street to The Embarcadero, including Piers 40, 42, 44, 46A and a portion of 46C.

Rincon Point-South Beach Redevelopment Area

The Redevelopment Agency identifies 14 separate development sites, labeled A through M, within the Rincon Point-South Beach Redevelopment Area (see Figure 2, page 17). Table 1, page 18 lists all development sites within the Redevelopment Area, including 1980 Redevelopment Plan land use designation, current land use, and proposed changes. Each development site is described in more detail below.

Rincon Point Sub-area

Redevelopment Site A (Assessor's Block # 3715). This 13,146-gross-square-foot (gsf) site, located at the northwest corner of Steuart and Howard Streets, is designated for commercial use in the 1980 Redevelopment Plan, with permitted uses such as business and professional offices, retail sales, and eating and drinking establishments. Housing is a designated alternative use.

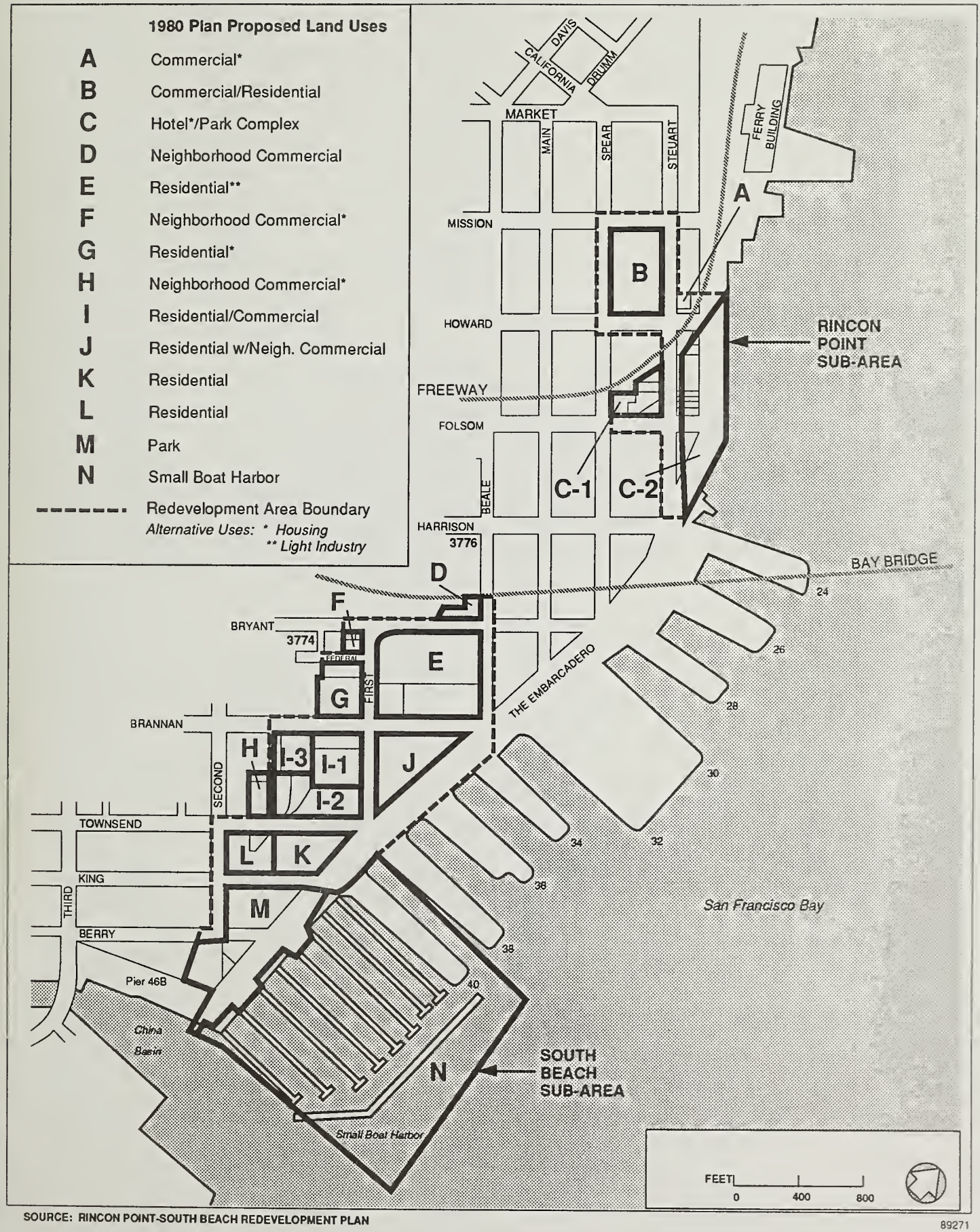
This site has been redeveloped and contains approximately 90,000 gsf of commercial office use; about 80,000 gsf are currently leased.

Redevelopment Site B (Assessor's Block #3716). In accordance with the 1980 Redevelopment Plan, Site B, containing the Rincon Annex Post Office building, has undergone historic restoration for adaptive reuse and redevelopment as Rincon Center. This mixed-use project contains 500,000 gsf of commercial retail use, 250,000 gsf of office use, 316 housing units (50% low/moderate income) and a 500-space underground parking garage. Approximately 145 housing units are currently occupied.

Redevelopment Site C (Assessor's Blocks #3741 and #3742). This site is located within two adjacent blocks with several separate owners, uses, and different redevelopment designations. The site is described below in two parts, C-1 and C-2.

- At the northwest corner of Folsom and Steuart Streets, Site C-1 currently contains approximately 270 spaces of surface public parking, and a two-story heavy commercial and office building and associated parking. Under the 1980 Redevelopment Plan, this 53,415-gsf site would be developed with an 800-room hotel complex, about 130 units of housing,

REDEVELOPMENT PLAN DEVELOPMENT SITES FIGURE 2



SOURCE: RINCON POINT-SOUTH BEACH REDEVELOPMENT PLAN

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TABLE 1

RINCON POINT-SOUTH BEACH DEVELOPMENT SITES

Development Site	Assessor's Block #	1980 Redevelopment Plan Designation	Site Status	Current Land Use	Proposed Change in Redevelopment Plan Designation
A	3715	Commercial (Alternate Use: Housing)	Redeveloped	90,000 gsf office	None
B	3716	Commercial/Residential	Redeveloped	Rincon Center: 500,000 gsf commercial 250,000 gsf office 316 housing units (50% low/ moderate income) 500 space parking garage	None
C-1	3741	Hotel (Alternate Use: Housing)	Not Redeveloped	Approximately 270 spaces public parking; 3-story building with heavy commercial and office use	500,000 gsf office
C-2	3742 3743	Park Complex	Not Redeveloped	Heavy equipment maintenance and outdoor parking	None
D	3766	Neighborhood Commercial	Not Redeveloped	Approximately 130 public parking spaces	24 units of Senior Citizen housing
E	3773	Residential	Redeveloped	Bayside Village: 868 housing units (20% low/moderate income)	None
F	3774	Neighborhood Commercial (Alternate Use: Housing)	Not Redeveloped	Billboard, Cape Horn Warehouse containing print shop	None
G	3774	Residential (Alternate Use: Light Industry)	Not Redeveloped	Food processing, automobile processing, warehouse	None
H	3789	Neighborhood Commercial (Alternate Use: Housing)	Not Redeveloped	Japan St. Warehouses (2), including 4,500 gsf restaurant	None
I-1	3789	Neighborhood Commercial	Not Redeveloped	Oriental Warehouse (vacant); tilt-up warehouse	Oriental Warehouse to be reused as 500-space parking garage and 12,500 gsf commercial. Tilt up warehouse to be removed and replaced with housing, for a total of 422 units on sites I-1 and I-3.
I-2	3789	Residential	Redeveloped	South Beach Marina Housing (414 housing units, 20% low/moderate income; 400 parking spaces, neighborhood serving retail)	None
I-3	3789	Residential	Not Redeveloped	Parking for food processing facility across Brannan Street	Total of 422 housing units to be built on Sites I-1 and I-3.

TABLE 1 (Continued)

Development Site	Assessor's Block #	1980 Redevelopment Plan Designation	Site Status	Current Land Use	Proposed Change in Redevelopment Plan Designation
J	3790	Residential with Neighborhood Commercial	Redeveloped	Delancey Street housing: 177 housing units (100% low/moderate income); 177 parking spaces; 64,000 gsf retail	None
K	3792	Residential	Project under negotiation To be Redeveloped	112 housing units (Construction to begin 1990)	None
L	3793	Residential	Not Redeveloped	Light industrial, open parking, railroad tracks	None
M	3801	Park, w/200 parking spaces	Not Redeveloped	Open storage area, international Longshoremen Worker's Union Building, a waterfront restaurant, and a ship-on-land restaurant	None
N	Piers 40, 42, 44, 46A	Small-boat harbor w/ marine-support uses, parking	Partially Redeveloped	Piers 42, 44, 46A: 668 small-boat slips; Pier 40: Parking, yacht club, marine-support uses, 67,500 gsf shed containing ship repair use	Pier 40: 150 parking spaces, a public piazza, 33,000 gsf of marine-related uses including a ship chandlery, a ship museum, 67,500 gsf commercial space, and a harbor master's office

65,000 gsf of commercial retail uses and a 300-space garage. As an alternative, this site could be developed with approximately 370 housing units with ground-floor retail commercial.

- Site C-2 is generally bounded by Howard and Steuart Streets and the seawall; a segment of The Embarcadero is within the site. The entire 212,207-gsf site is within the Port jurisdiction line, and is currently used for heavy equipment maintenance and outdoor parking. The 1980 Redevelopment Plan calls for this site to be developed as a major park, with up to 12,000 gsf of area north of Folsom Street to be developed for restaurant uses.

South Beach Sub-area

Redevelopment Site D (Assessor's Block #3766). Site D, at the northwest corner of Bryant and Beale Streets and adjacent to the Bay Bridge, currently contains approximately 130 public parking spaces. The 1980 Redevelopment Plan calls for this site to be developed with 12,000 gsf of retail commercial space.

Redevelopment Site E (Assessor's Block #3773). This 340,945-gsf development site, consisting of the entire block bounded by Bryant, First, Beale, and Brannan Streets, is designated for residential use in the 1980 Redevelopment Plan. Site E has been redeveloped as Bayside Village, containing 868 housing units (20% low/moderate income). There are currently approximately 660 occupied units.

Redevelopment Site F (Assessor's Block #3774). This 16,333-gsf site on First Street between Bryant and Federal Streets currently contains an advertising billboard and the Capehorn Warehouse, which is used as a printing shop. Under the 1980 Redevelopment Plan, this site would be redeveloped with 55,000 gsf of commercial use, including adaptive reuse of the Capehorn Warehouse. As an alternative use, the Plan calls for the construction of up to 36 housing units on the site.

Redevelopment Site G (Assessor's Block #3773). This 95,865-gsf site consists of the southeastern portion of the block bounded by Bryant, Second, First, and Brannan Streets. Site G currently contains a portion of a food processing facility, an automobile facility, and a three-story warehouse. The 1980 Plan calls for redevelopment of the site with 242 housing units.

Redevelopment Site H (Assessor's Block #3789). Site H is located on the northwest corner of Colin P. Kelly, Jr. and Townsend Streets. This 32,301-gsf site contains the two Japan Street Warehouses used for industrial warehousing, and a 4,500-gsf restaurant. The Japan Street Warehouses are part of the proposed South End Historic Warehouse District.

Under the 1980 Redevelopment Plan, Site H would be redeveloped for approximately 35,000 gsf of commercial use. The Japan Street Warehouses would be historically restored and adaptively reused as neighborhood commercial uses, including retail sales, professional offices, and eating and drinking establishments. The 1980 Plan identifies housing as an alternative use for this site, yielding approximately 80 units.

Redevelopment Site I (Assessor's Block #3789). This site consists of a single block bounded by Colin P. Kelly Jr., Brannan, First and Townsend Streets, with multiple owners and uses. The site is described below in three parts, I-1, I-2, and I-3.

- Site I-1, at the southwest corner of First and Brannan Streets, is 97,946 gsf and currently contains two warehouses. The first, at the corner of First and Brannan, is a tilt-up warehouse, approximately 25 years old. The Oriental Warehouse has frontage on First Street. Built in 1867, this wood and brick structure is on the National Register of Historic Places and is a designated San Francisco Landmark. The Oriental Warehouse is currently vacant and in need of rehabilitation, as it suffered damage from a fire in 1987 as well as from the October 1989 earthquake. It is currently cordoned off and shored-up with braces on all four sides.

  The 1980 Redevelopment Plan Design for Development document calls for this site to be developed for neighborhood commercial use. The Oriental Warehouse would undergo historic rehabilitation and would include a combination of such uses as retail commercial, day-care, recreation and service facilities. The exterior facade would be maintained. The tilt-up warehouse at the corner of First and Brannan Streets would be removed to enhance the form and visibility of the Oriental Warehouse.

- Site I-2, at the southwestern portion of the block, has been redeveloped as the South Beach Marina Housing Development, containing 414 housing units (20% low/moderate income), 400 parking spaces, and neighborhood commercial and restaurant uses. This 135,424-gsf site was designated for residential use in the 1980 Redevelopment Plan.

- Site I-3, at the southeastern corner of Brannan and Colin P. Kelly Jr. Streets, contains 50,342 gsf and is currently used as a parking lot for the food processing facility across Brannan Street. This site was designated for residential use in the 1980 Redevelopment Plan.

Development Site J (Assessor's Blocks #3790). This triangular-shaped site, bounded by Brannan and First Streets and The Embarcadero, consists of 128,702 gsf of surface area. This entire site is within Port jurisdiction. Site J has been redeveloped in accordance with its 1980 Redevelopment Plan designation and contains the Delancey Street Foundation housing development, including 177 residential units (all low/moderate income), 177 parking spaces, and 64,000 gsf of neighborhood-serving commercial space.

Development Site K (Assessor's Block #3792). Site K consists of 92,076 gsf of the easternmost half of the block bounded by Townsend, Second, and King Streets and The Embarcadero, and is entirely within the Port's jurisdiction. The 1980 Plan calls for this site to be redeveloped with housing. The Redevelopment Agency is currently negotiating with BRIDGE Housing Corporation on a development that would provide 112 housing units on Site K. If approved, construction of the project would begin in 1990.

Development Site L (Assessor's Block #3793). Site L consists of the westernmost half of the block bounded by Townsend, Second and King Streets and The Embarcadero and is 81,125 gsf in area. This site currently contains light industrial uses including a photo composition and printing company, open parking and railroad tracks. The 1980 Redevelopment Plan calls for this site to be developed with up to 195 residential units.

Development Site M (Assessor's Block #3801). Site M contains 292,589 gsf and is bounded by King and Second Streets and the seawall line. A portion of The Embarcadero is included within Site M. This site is currently used mainly as a self-storage area; it also contains the International Longshoremen Worker's Union Building, a waterfront restaurant, and a ship-on-land restaurant. The entire site lies within the Port jurisdiction line.

The 1980 Redevelopment Plan calls for Site M to be used as a major park with up to 10,000 gsf retained for the existing ship-on-land restaurant and for other uses compatible with and supportive of the park and adjacent small-boat harbor. Site M would also contain approximately 200 parking spaces.

Site N (Piers 40, 42, 44, and 46a). The 1980 Redevelopment Plan called for a marina to be developed replacing Piers 42, 44, and 46A to accommodate small boats. Since adoption of the

1980 Plan, a 668-slip marina has been constructed, and is currently 80% occupied. All of Site N is within the Port jurisdiction line. Pier 40, owned by the Port of San Francisco, is a finger pier currently containing a yacht club and associated parking (about 50 spaces) and a 67,500-gsf shed currently occupied by a ship building and repair firm that also occupies Piers 36 and 38. Under the 1980 Redevelopment Plan, Pier 40 would be used for marina support activities; a full range of services related to recreational boating would be provided, including boat building and repair facilities, dry dock storage, sail making, boat sales and rental, and a ship chandlery.

Proposed Project

The proposed project is an amendment to the 1980 Rincon Point-South Beach Redevelopment Plan that would change the land use designation of four development sites within the Redevelopment Area, including Sites C, D, I and N (see Figure 3, page 24).

On Site C-1, the proposed Amended Plan would allow approximately 500,000 gsf of office use as an alternative to the hotel, housing, commercial retail, and garage uses designated in the 1980 Plan. No change in land use designation is proposed for Site C-2.

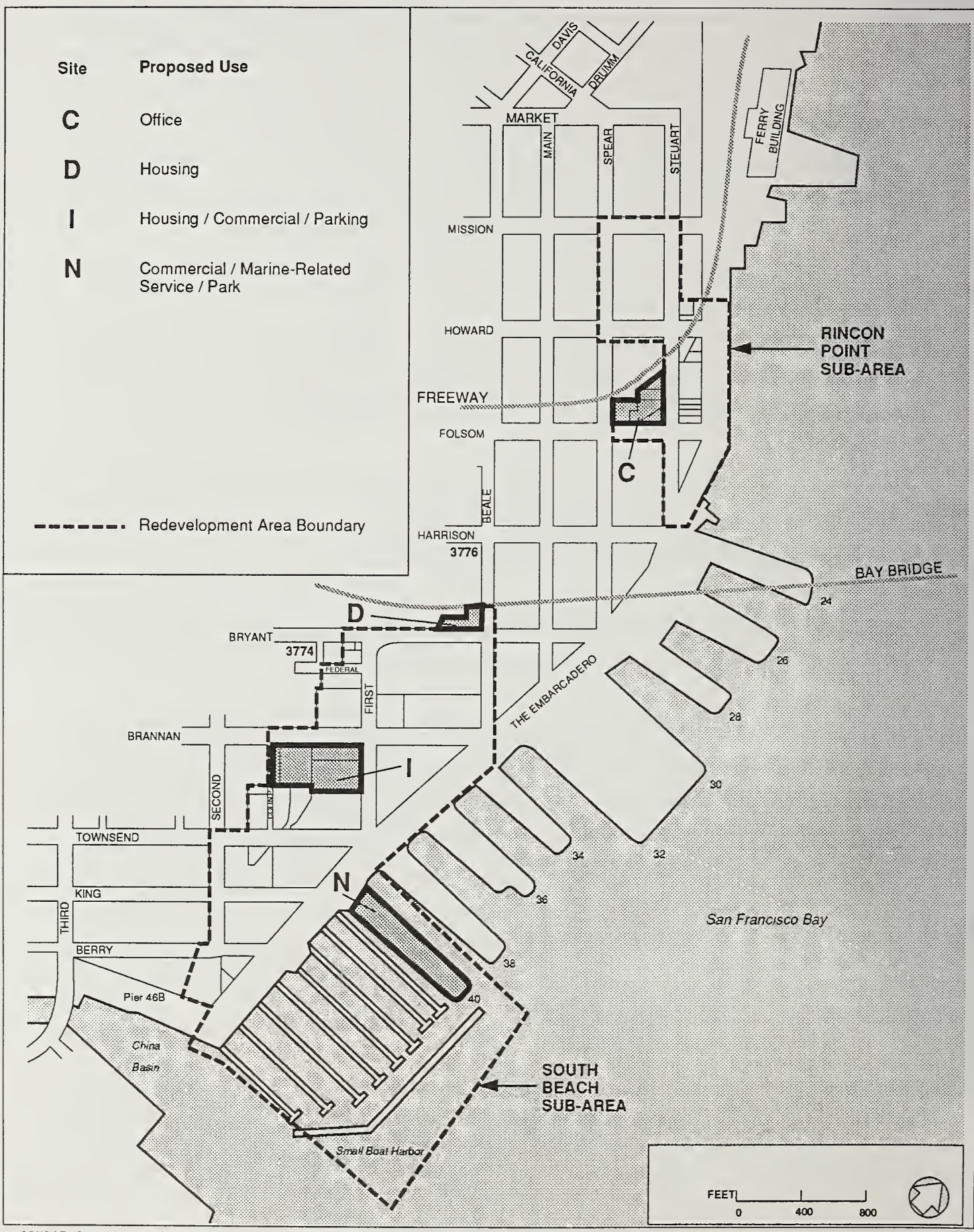
The proposed Amended Plan would allow senior citizen housing as an alternative use on Site D from 12,000 gsf of retail commercial to approximately 24 units.

Sites I-1 and I-3 would be affected by the proposed Amended Redevelopment Plan. The surface parking lot and the tilt-up warehouse at the corner of First and Brannan Streets would be removed and replaced with approximately 422 units of housing. Portions of the Oriental Warehouse would be reused and would contain about 12,500 gsf of commercial use and a parking facility that would accommodate approximately 500 cars (420 for proposed housing on adjacent property and 80 spaces for proposed commercial use). In order to accommodate these uses, the internal timber frame and foundation system would be removed and replaced with a steel-frame meeting building and seismic code requirements. It is also proposed that the height limit on sites I-1 and I-3 be increased from 105 feet (as designated in the 1980 Plan) to 160 feet.

At Site N, the proposed Amended Redevelopment Plan would permit Pier 40 to be developed with a public piazza and approximately 150 parking spaces. The existing shed on Pier 40 would

SITES AFFECTED BY PROPOSED PLAN AMENDMENT

FIGURE 3



SOURCE: EIP ASSOCIATES

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be retained and renovated, and would contain about 67,500 gsf of commercial space, and about 33,000 gsf of marine-related uses, including a ship chandlery, a ship museum, and a Harbor Master's office. The existing footprint of Pier 40 would not be altered; no new fill would be added to the Bay. The existing small-boat harbor, recently constructed as part of the 1980 Redevelopment Plan, would not be affected.

The proposed Plan Amendment would allow alternative uses, as designated in the 1980 Redevelopment Plan, to be combined on the same parcel. This provision could affect development sites F, G, and H.

The proposed Plan Amendment would also permit the Agency, on a short-term basis, to lease any of its property that has not been redeveloped for uses that are not in conformance with the adopted Redevelopment Plan. These uses would include temporary public storage buildings such as those currently located on site M, storage within existing buildings, and construction staging and parking areas.

Purpose and Intended Use of EIR

This document is a Supplemental Program EIR that evaluates the environmental impacts of full build-out of the Proposed Amended Rincon Point-South Beach Redevelopment Plan. This EIR is intended to address the broad programmatic implications of implementation of the proposed Amended Plan. As defined in the CEQA Guidelines, a Program EIR is prepared on a series of actions that can be characterized as one large project, the components of which may be related geographically, by their similar environmental effects, as logical parts of a chain of actions, or by the issuance or rules, regulations or plans governing a continuous program (Section 15168, CEQA Guidelines). This EIR is also project-specific due to the level of detail of the proposed amendments, which designate uses for specific sites. Although particular designs have not been prepared for any of the sites, the types and sizes of uses for each site have been approximated. Under CEQA Section 21090 a redevelopment plan is deemed a single project. Thus, environmental analysis of individual projects within the Redevelopment Area will not be performed.

The base case against which the proposed project impacts are measured is the January 1990 existing conditions, except for transportation impacts, where base year traffic volumes represent 1989 conditions.

A Final EIR was certified for the Rincon Point-South Beach Redevelopment Plan on November 5, 1980. Since certification of the Final EIR, new information has become available regarding cumulative impacts of downtown growth. This new information has been published in the Downtown Plan EIR (certified in 1984), the Mission Bay Final EIR (certified in 1990), and the South of Market Plan EIR (certified in 1989). The Downtown Plan EIR analyzed impacts of downtown space and employment growth under various development controls, in relation to Citywide and regional growth. The Mission Bay EIR covers the impacts of potential development in a 300-acre area just south of the greater downtown, from Townsend Street to 16th Street, east of the I-280 freeway. The South of Market Plan EIR analyzes impacts of development under the proposed South of Market Plan development controls and alternatives in the area generally south of Mission Street to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second Street.

This Supplement to the 1980 Rincon Point-South Beach Redevelopment Plan EIR provides new cumulative data and information. Incorporation of this information by reference with a summary is used pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines, Subsection 15150).

New project-specific information is also included in this Supplement, as a result of redevelopment that has occurred in the Area since certification of the Final EIR in 1980, and as a result of the proposed amendment to the existing Plan.

Project Approvals

Following a public hearing on this Supplemental EIR before the Redevelopment Agency Commission and the City Planning Commission, responses to all written and oral comments will be prepared; this Supplemental EIR will be revised accordingly and presented for certification as to accuracy, objectivity and completeness.

Section 320-325 of the City Planning Code limits the amount of office space that can be approved to 950,000 gsf per year. Proposition M also limits the development of office space, allowing no more than 475,000 gsf of office space to be approved annually until office space approved in the early 1980s is balanced to 950,000 gsf. Private office development projects are subject to review and approval by the City Planning Commission under City Planning Code Section 321, Office Development: Limits. Although office space resulting from the proposed Plan Amendment would count against the annual allowable square footage, it would not be subject to the annual limit review by the City Planning Commission because it would be located within the Redevelopment Agency's jurisdiction.

Prior to adoption of the proposed Redevelopment Plan Amendment, an amendment to the Northeastern Waterfront Plan, Ferry Building Area, Block 3741, Policy 1, would be required to allow office use on Site C-1 (See Table 4, page 85, Land Use Impacts Section). The Northeastern Waterfront Plan, North China Basin Area, Piers 40-46A, Policy 3, would require amendment, as the proposed use of Pier 40 would not provide dry dock and boat repair facilities. The Northeastern Waterfront Plan, North China Basin Area, Walkways and Open Space, Policy 2, would require amendment, as the proposed Amended Redevelopment Plan does not include a major plaza next to the Oriental Warehouse. These Amendments to Master Plan Policies would need to be considered and adopted by the City Planning Commission prior to its determination as to whether or not the proposed Redevelopment Plan conforms to the San Francisco Master Plan.

On November 14, 1986, the voters of San Francisco passed Proposition M, the Accountable Planning Initiative. Proposition M establishes eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of commuter automobiles; protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership; earthquake preparedness; landmark and historic building preservation; and protection of open space. Prior to determining that the Plan Amendment was consistent with the San Francisco Master Plan, the City Planning Commission will be required to find that the proposed legislation is consistent with the Priority Policies. The Agency has requested that the Port Commission approve the proposed Plan amendment, as it relates to property under Port jurisdiction.

III. ENVIRONMENTAL SETTING

A. LAND USE

The following information adds to the Land Use, Zoning, Visual and Aesthetic Setting sections on pages 29-35 of the 1980 Final EIR.

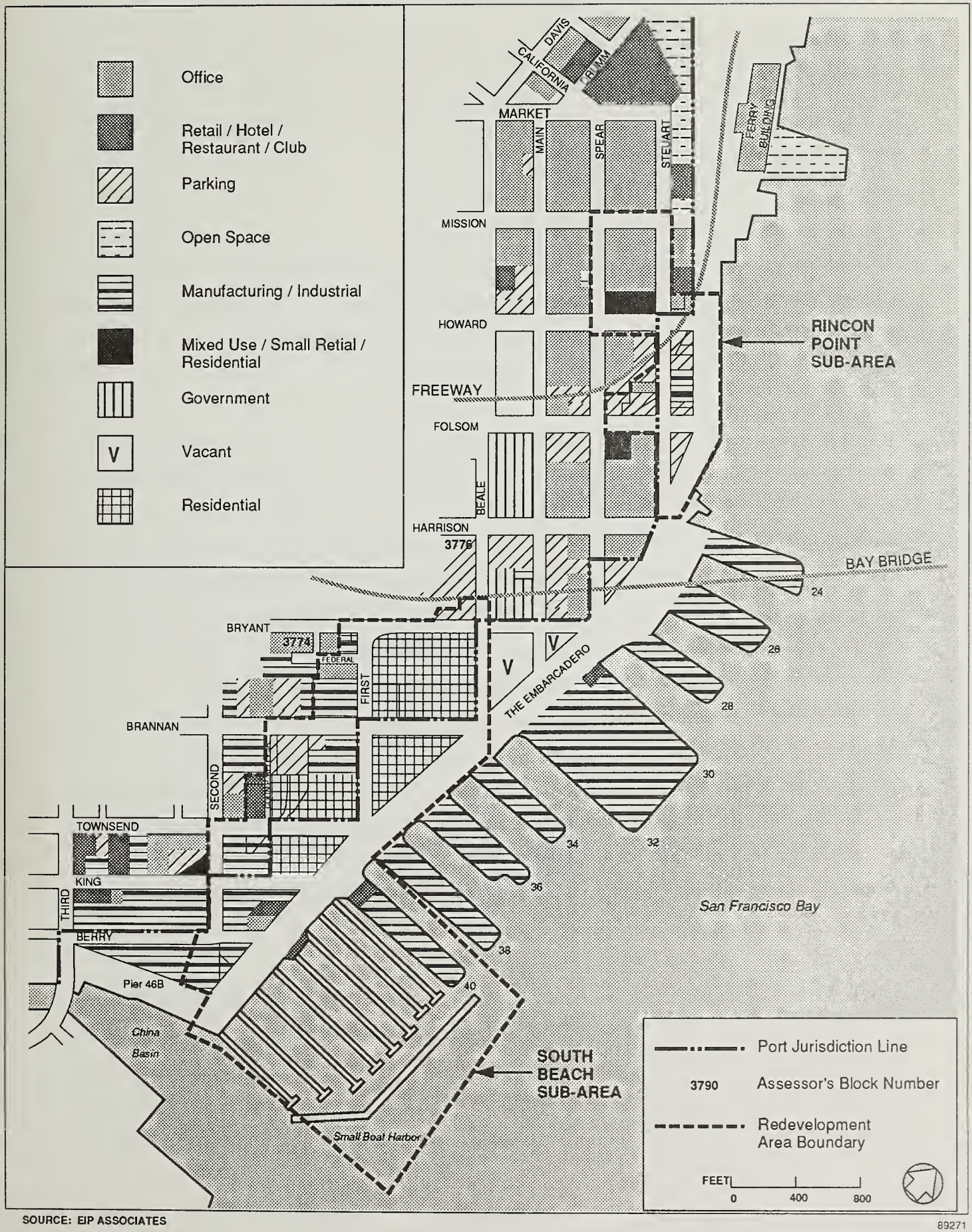
LAND USE

The Rincon Point-South Beach Redevelopment Area is located on San Francisco's Northeastern waterfront. The Northeastern waterfront was once a vital area of San Francisco, with thriving maritime and related activities that contributed to the City's economic well-being. Since World War II, however, activity in the area has declined. Changes in transportation technology related to the movement of goods by water contributed to the decline of the waterfront. The placement of cargo in standardized containers has resulted in dramatic shifts in maritime transportation patterns. Containerization has shifted emphasis from the traditional break-bulk method of cargo handling, for which the port's finger piers were designed, and has created the need for large modern facilities requiring considerable capital investment and backland support areas.

Today, portions of the Northeastern waterfront, including parts of the Rincon Point-South Beach Redevelopment Area, continue to be used for break-bulk cargo handling, ship repair, and related activities; however, some of the piers are vacant and dilapidated, and some of the land is underutilized. The area contains both occupied and vacant industrial and manufacturing uses, as well as surface parking lots. The Citywide demand for office space has resulted in the conversion or demolition and replacement of many existing buildings in the area with offices, particularly in the northern end, nearer the Central Business District. Figure 4, page 29 shows existing land uses within and surrounding the Rincon Point-South Beach Redevelopment Area. Figure 4 also shows the area under Port of San Francisco jurisdiction.

EXISTING LAND USES

FIGURE 4



SOURCE: EIP ASSOCIATES

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Rincon Point Sub-Area

The Rincon Point sub-area consists of about 19 acres, of which about 12 acres are streets. Of the three development sites within this sub-area, two have been redeveloped. Site A contains a 90,000 gross square foot (gsf) office building, and Site B contains the Rincon Center mixed use development with 500,000 gsf of commercial space, 250,000 gsf of office space, and 316 housing units. Site C has not been redeveloped. Site C-1 currently contains a 270-space public parking lot and an older two-story building containing heavy commercial and office uses. Site C-2 contains heavy equipment maintenance and outdoor parking areas. The 1980 Redevelopment Plan calls for Site C-1 to be redeveloped with a hotel or, alternatively, with housing and for Site C-2 to be redeveloped as a park complex.

Land uses in the vicinity of (but outside) the Rincon Point sub-area include mostly high-rise Financial District office buildings to the west and northwest. Newer buildings in the area include One Market Plaza, 100 Spear Street, 150 Spear Street, 160 Spear Street, 201 Spear Street, and 120 Mission Street. Directly across Folsom Street from Site C-1 is the Hills Plaza project, currently under construction. Adjacent to Site A on Steuart Street is the YMCA building and the historic Audiffred Building. To the south and southwest there is a mixture of parking lots and older industrial buildings, many converted to office use. Large uses in this area include the Golden Gate Transit bus parking lot on the south side of Folsom Street between Spear and Main Streets; the U.S. Post Office on the entire block between Folsom, Harrison, Main, and Beale Streets; and the Bayshore Towers luxury condominium project presently under construction on the south side of Harrison Street between Beale and Main Streets. The San Francisco Bay is east of the Rincon Point sub-area with the Ferry Building and Golden Gate Transit Ferry Terminal to the northeast. A plaza behind the Ferry Building and a promenade along the eastern side of The Embarcadero provide the public with waterfront access. The Rincon Point sub-area is bisected by the 70-foot high Embarcadero Freeway.

In December 1989, the Port Commission approved a resolution granting the right for a developer to study the possibility of constructing a 170-room hotel and a 107-berth boat harbor on Piers 24 and 26, adjacent to the Rincon Point sub-area to the east. Other proposed development near to but outside of the Redevelopment Area includes two surface parking lots proposed by the Port on Seawall Lots 329 and 330. The two lots, located in the triangular parcel bounded by Bryant

and Beale Streets and The Embarcadero, would contain a total of 405 parking spaces. The sites are currently vacant. Parking would be a temporary use on the site; the Port proposes to develop the site with an as-yet-undetermined use in about five years.

South Beach Sub-Area

The South Beach sub-area consists of approximately 50 acres of land, of which about 22 acres are streets. Of the 11 development sites within this sub-area, Sites E and J have been redeveloped for housing use; Site I has been partially redeveloped for housing use; a portion of Site N has been redeveloped as a small boat harbor; Site K has been approved for redevelopment for housing use; and the remainder of the sites have not been redeveloped.

Table 1, page 18 in the Project Description gives a detailed description of existing land uses and designated redeveloped uses of each site.

Land uses in the vicinity but outside of the South Beach sub-area include mostly industrial and manufacturing uses, parking lots and vacant parcels. The South Beach sub-area is separated visually and to some degree physically from the Rincon Point sub-area by the Bay Bridge. Much of the land below the bridge contains parking or is vacant; much of it is littered with debris. To the west of the South Beach sub-area within the block bounded by Second, Third, Bryant, and Brannan Streets is South Park, a small, isolated residential community, which also contains retail and manufacturing/industrial uses. East and northeast of the South Beach sub-area are Piers 24 through 38; some of these piers still handle shipping activities, while others are vacant and in poor repair.

PERMITTED USES

Use Districts

Permitted land uses for each development site within the Rincon Point-South Beach Redevelopment Area are designated within the 1980 Redevelopment Plan (see Figure 2, page 17). The Plan states that building types shall be those permitted by the San Francisco Building Code; limitations on the size of buildings are determined by standards on height, open space, off-street

parking, and building bulk as provided in the Plan and the accompanying Design for Development document. The Plan outlines the land use standards for each sub-area, as described below.

The Rincon Point-South Beach Redevelopment Plan allows for the following uses:

Rincon Point Sub-Area

Commercial. Permitted uses within areas designated for this land use include, but are not limited to, business and professional offices, retail sales, and eating and drinking establishments.

Hotel. The area designated for this land use may be developed for a 400- to 800-room hotel complex. As an alternate use, housing with a density range of 150 to 300 units per acre may be developed. Such housing use may include ground floor retail commercial uses.

Residential. The area designated for this land use may be developed with housing with a density range of 150 to 300 units per acre and with commercial and/or office use on the lower floors.

Major Park. The area designated for this land use may be developed for recreational use. In addition, up to 12,000 gsf of the area north of Folsom Street may be developed with restaurant uses.

South Beach Sub-Area

For all sites which are developed for residential use, the overall average density of housing for this entire sub-area may be within a range of 85 or 95 units per acre.

Residential. The areas designated for this land use may be developed with housing. For each development site, ten percent of the first floor area or 5,000 gsf, whichever is larger, may be developed for small-scale neighborhood convenience retail uses.

Residential With Neighborhood Commercial. The areas designated for this land use may be developed with housing. In addition, neighborhood convenience commercial uses (including but

not limited to retail sales, professional offices, and eating and drinking establishments) may be developed.

Residential (Alternate: Light Industry). The area designated for this land use may be developed with housing. An alternate, the area may be used to meet possible industrial expansion needs of existing development on abutting property to the west, provided that such use shall be approved by the Agency within two years after the effective date of the ordinance approving the Redevelopment Plan.

Commercial. The areas designated for this land use may be developed with neighborhood convenience commercial uses (including but not limited to retail sales, professional offices, and eating and drinking establishments). In addition, warehousing activities may remain. The Oriental Warehouse shall be retained and historically restored for adaptive re-use. The Oriental Warehouse may include such uses as day-care, recreation, and other public service facilities. The Cape Horn Warehouse and Japan Street Warehouses shall be retained and historically restored for adaptive re-use. As an alternative use, the Cape Horn Warehouse and the Japan Street Warehouses may be used for housing which may include ten percent of the first floor area or 5,000 gsf, whichever is larger, in small-scale neighborhood convenience retail uses provided that prior thereto, the procedures of the National Historic Preservation Act, 16 USCA Section 470 et seq. are complied with.

Major Park. The areas designated for this land use must be developed for recreational use and open space. In addition, the office use (located on the Embarcadero north of Berry Street) may remain in its existing use or other use compatible with and supportive of the park and small boat harbor, and the restaurant use in a ship (located on the Embarcadero between Piers 42 and 44) may remain in this area. In addition, a limited amount of harbor-related uses such as boat yard and boat haul-out facilities may be permitted.

Small Boat Harbor. The area designated for this land use is to be developed with facilities for berthing of small boats and related uses. Pier 40 is designated for support activities and public access and may include space for restaurant uses, small-scale office uses on the mezzanine level, and a full range of service uses related to recreational boating. These services may include but not

be limited to such uses as boat building and repair facilities, dry dock storage, sail making, boat sales and rental, and ship chandlery.

Density of Housing

The Redevelopment Plan outlines the average density of housing (dwelling units per acre) as follows:

Site C-1: 300 units/acre maximum if developed for housing
South Beach Sub-Area: 40 units/acre minimum; 110 units/acre maximum

Height and Bulk

The maximum allowable building height for each site within the Redevelopment Area is designated in the map entitled "Height Limitations" within the Redevelopment Plan (see Figure 5, page 35). Height limitations range from 24 to 240 feet. The plan provides for the Agency to grant height and density bonuses in an amount up to 15% for housing developments in order to encourage the provision of low- and/or moderate-income housing. No height bonuses are allowed on sites within the 40-foot height limit (Sites C-2, J, K, N).

The building bulk of structures within the Redevelopment Area is subject to the standards of Article 2.5 of the City Planning Code.

Area Coverage

The Plan states that the percentage of land or parking podium that may be covered by residential buildings in the South Beach Sub-Area should not exceed 65% and that, to the maximum extent feasible, the open space should be provided at ground level. Any open space on top of a parking podium should be designed to provide easy pedestrian and visual transition from the sidewalk.

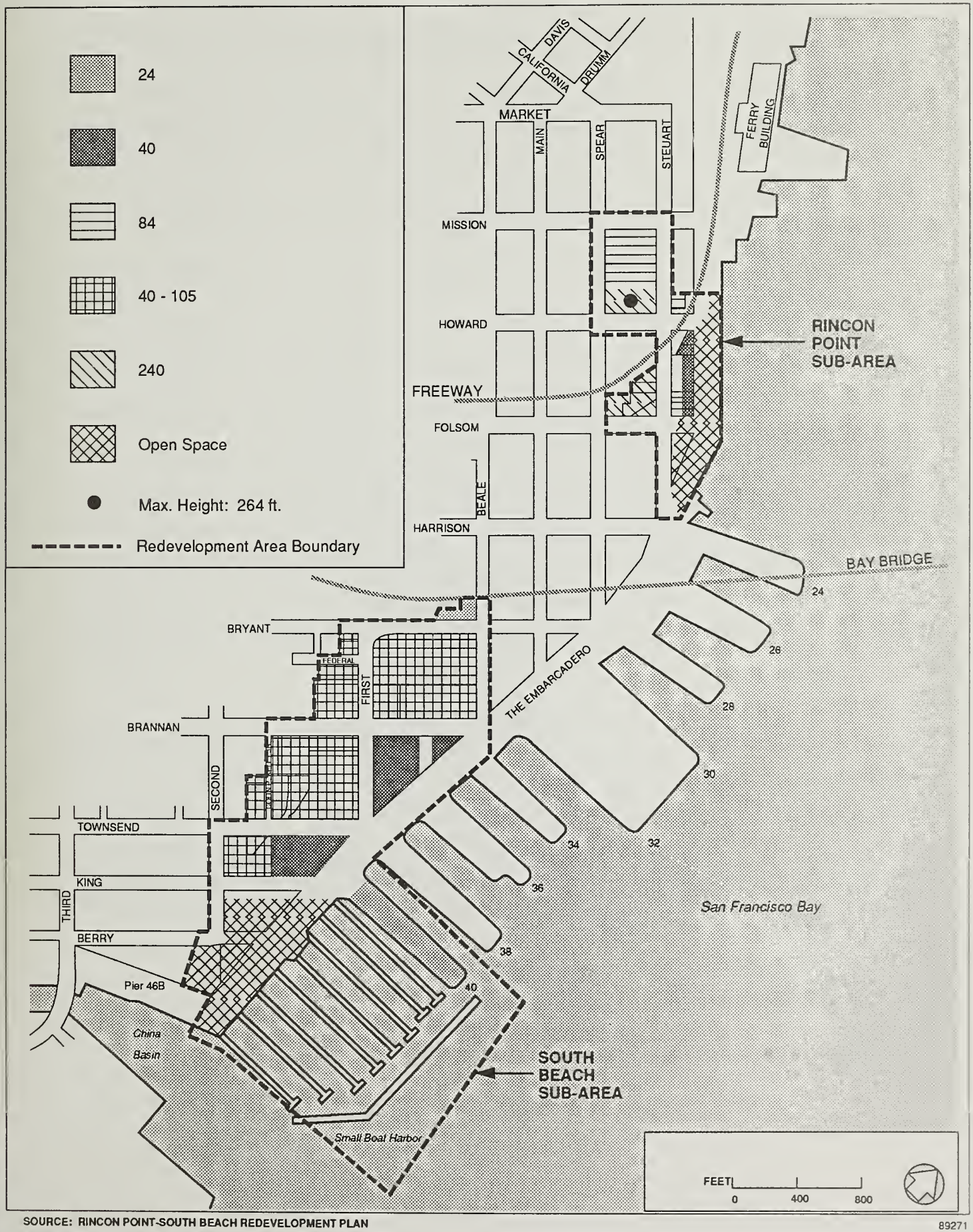
Off-Street Parking and Loading

The Plan outlines the maximum number of off-street parking spaces that may be provided as follows:

- Residential, Rincon Point Sub-Area: one for each dwelling unit.

REDEVELOPMENT PLAN HEIGHT LIMITATIONS

FIGURE 5



SOURCE: RINCON POINT-SOUTH BEACH REDEVELOPMENT PLAN

89271

- Residential, South Beach Sub-Area: one for each dwelling unit.
- Hotel: one for each 16 guest bedrooms plus one for the manager's dwelling unit, if any.
- Retail Stores: one for each 500 gsf of occupied floor area where the occupied floor area exceed 5,000 gsf.
- Restaurants: one for each 300 gsf of occupied floor area where the occupied floor area exceeds 5,000 gsf.
- Business Offices, Rincon Point Sub-Area: one for each 5,000 gsf of floor area.
- Business Offices, South Beach Sub-Area: one for each 2,000 gsf of floor area.
- Industry: one for each 1,500 gsf of occupied floor area where the occupied floor area exceeds 7,500 gsf.
- Small Boat Harbor: one for each two boat slips.

Off-street loading spaces should be provided for the following gsf of floor area:

Retail Stores and Industry:	None for 0-10,000 gsf, 1 for 10,001 - 60,000 gsf, 2 for 60,001 - 100,000 gsf, 3 for over 10,000 gsf plus 1 for each additional 80,000 gsf.
All Other Uses:	None for 0 - 100,000 gsf, 1 for 100,001 - 200,000 gsf, 2 for 200,001 - 500,000 gsf, 3 for over 500,000 gsf plus 1 for each additional 400,000 gsf.

Open Space

The Plan states that usable, easily accessible private open space (including outdoor living, recreation or landscaped yards, decks, balconies, porches and roofs) should be provided for each dwelling unit as follows:

Rincon Point Sub-Area:	50 gsf minimum.
South Beach Sub-Area:	133 gsf minimum.

SAN FRANCISCO MASTER PLAN CONSIDERATIONS

The San Francisco Master Plan contains land use policies that apply to the proposed Rincon Point-South Beach Redevelopment Plan Amendment. These policies are contained within the objectives and policies of the Commerce and Industry Element (June 1978), the Northeastern Waterfront Plan Element (originally drafted in 1980; amended April 1985), and the Urban Design Plan (originally drafted in 1971; amended August 1976). The City Planning Commission will consider compliance with the current version of the Master Plan in its review of the proposed Plan Amendment.

OTHER ADOPTED ENVIRONMENTAL PLANS AND GOALS

San Francisco Bay Plan/San Francisco Waterfront Special Area Plan

The San Francisco Bay Plan established San Francisco Bay Conservation and Development Commission's (BCDC) policy on Bay Fill throughout the Bay. A portion of the Rincon Point-South Beach Redevelopment Area is under jurisdiction of BCDC. The area covered by the BCDC San Francisco Waterfront Special Area Plan is the land and water area located along the existing shoreline from the Hyde Street Pier to India Basin, including all areas within the jurisdiction of the Port of San Francisco.[1] The line of Port jurisdiction in the project area is shown on Figure 4, page 29.

Both of these plans address the issue of fill in the Bay. As delineated by the McAteer-Petris Act, the State legislation that established BCDC, the Commission can allow fill only for certain defined water-oriented uses. The water-oriented uses the law permits include water-related industry, bridges, wildlife refuges, and water-oriented recreation and public assembly. Housing and offices, two uses for which large areas of the Bay were filled in the past, have been determined by BCDC not to be water-oriented uses. BCDC can allow fill only under the following conditions:

1. There is no alternative upland location for any fill authorized.
2. The fill is the minimum necessary.
3. The nature, location, and extent of any fill will minimize harmful effects to the Bay.
4. The fill is constructed in accordance with sound safety standards.

5. The fill will, to the maximum extent feasible, establish a permanent shoreline.

6. The person proposing to fill has sufficient title to the properties in question as to be able to fill it in the manner and for the uses to be approved.[2]

The San Francisco Waterfront Special Area Plan states that Piers 34 through 44 are in poor condition, and that "while some maritime use of these piers still takes place, it is expected that they will be available for non-maritime development within a few years" (p. 25), and that the area from the Bay Bridge to China Basin, in general, "comprises an underutilized portion of the City with a potential for regeneration" (p. 25).

The San Francisco Waterfront Special Area Plan lists general policies and recommendations for the areas covered by the Plan, as well as geographic-specific policies and recommendations for three separate geographic vicinities. These policies and recommendations and the proposed Amended Plan's relationship to them are listed in Table 4, page 85 in the Land Use Impacts section. The policies included in the Special Area Plan, in addition to the McAteer-Petris Act and other sections of the San Francisco Bay Plan, are the basis for BCDC permit decisions. The recommendations are suggestions to be considered in BCDC's review of permit applications.

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1. Bay Conservation and Development Commission, San Francisco Waterfront, Special Area Plan, Area covered by Plan, p. 9.

2. Bay Conservation and Development Commission, "Summary of McAteer-Petris Act and Bay Plan Provisions Generally Applicable to the San Francisco Waterfront," San Francisco Waterfront, Special Area Plan.

B. POPULATION, HOUSING AND EMPLOYMENT

The following information expands upon the Business Relocation Setting section on p. 44 of the 1980 Final EIR, and the Social and Employment Characteristics Setting section on p. 47.

POPULATION AND HOUSING

Population and Households in the Downtown & Vicinity

The Mission Bay EIR presents population and household data for the Downtown & Vicinity and compares this data to citywide totals. In a citywide context, the role of the Downtown & Vicinity as a residential area has been secondary to its role as an employment center. While employment in the Downtown & Vicinity accounts for 58% of total employment in the City, population in the Downtown & Vicinity is only about 6% of the total City population. The Downtown & Vicinity does fulfill some special functions as a residential area and is the location of much newly constructed and proposed housing in the City.

In 1985 it was estimated that about 46,000 people lived in the Downtown & Vicinity. The rate of population growth has been faster in the Downtown & Vicinity than in the rest of the City, primarily because many of the immigrants who account for a large part of population growth in the City have settled in low-cost housing in the area. The share of the total City population living in the Downtown & Vicinity has increased.

Compared to the share of total population, a smaller share of the City's employed population lives in the Downtown & Vicinity. That reflects another aspect of the special role of the Downtown & Vicinity as a residential area. It is home to a relatively large number of San Francisco's elderly who need low-cost housing and access to transit and other services. Those aspects of downtown living also attract San Francisco's transient, unemployed population.

In 1985, about 25,000 households lived in the Downtown & Vicinity. That represented eight percent of total City households. There are proportionally more households than population, reflecting smaller-than-average household sizes in the Downtown & Vicinity. Average household size in the area is about 1.6 persons, while there are 2.3 persons per household on average for the City as a whole.

The employed-persons-per-household factor for the Downtown & Vicinity also is lower than the factor for the City. On average, there is less than one worker per household in the Downtown & Vicinity. This means that there are many households with one worker as well as households with no workers. This is consistent with the profile of the Downtown & Vicinity as home to many single-person households, a large share of the City's elderly who are beyond their working years, and the unemployed, disabled, and others needing public assistance. (See Mission Bay EIR, Vol. II, pp. VI.C.11-14.)

Redevelopment Area

There are currently 1,900 residential units within the Rincon Point-South Beach Redevelopment Area, including approximately 560 low/moderate income units. All of these housing units have been built since adoption of the 1980 Redevelopment Plan.

EMPLOYMENT

There are currently about 1,590 estimated employees working within the Redevelopment Area. Of these, approximately 1,070 work in office, 110 in light industrial, and 410 within retail and service-related activities.

C. TRANSPORTATION

This section describes the project site locations, existing traffic, parking conditions and transit service in the project study area, and supplements the Transportation Setting section on page 67 of the 1980 Final EIR.

PROJECT SITE LOCATIONS

Site C is located just outside the Downtown Core automobile control area designated in the San Francisco Master Plan.[1] A Plan goal is to reduce the number of private commuter vehicles and excess automobile traffic in the downtown core. The site is located in an area designated as a "Parking Belt" in the Downtown Transportation Plan of the San Francisco Master Plan. Parking belts are areas that the Plan identifies as appropriate for short-term parking facilities to replace spaces removed from the core area. The site is located along one of the alternative alignments for the proposed extension of CalTrain to Market Street/Second Street, now under consideration.

Site C is the closest site to the Financial District. The Embarcadero, near the eastern boundary of Site C, is considered a primary vehicular and transit preferential street by the Transportation Element of the San Francisco Master Plan.[2] Folsom Street, on the southern boundary of Site C, is considered a transit preferential street and a bicycle commuter street.

This site, as well as the other three, are within the planning area of the Northeastern Waterfront Area Plan of the San Francisco Master Plan.[3] Plan policies call for the restriction of additional parking along the waterfront. In general, the proposals for the four sites respond to the plan by limiting parking, providing parking for residential uses and providing waterfront parking to serve commercial and recreational uses. The removal of parking on this site would be consistent with policies in the Northeastern Waterfront Element of the San Francisco Master Plan.

Site D is two blocks west of The Embarcadero, the closest transit preferential street, and two blocks east of Second Street, a transit preferential, transit shuttle and bicycle commuter street. Site D is two blocks from a portion of Harrison Street that is considered a Primary Vehicular street. This site is outside both the core-auto control area and parking belt of the downtown.

Site I is one block west of The Embarcadero, a primary vehicular and transit preferential street. It is one block east of Second Street, a transit preferential, transit shuttle and bicycle commuter street. This site is outside both the core-auto control area and parking belt of the downtown.

Site N, on Pier 40, is immediately adjacent to The Embarcadero, a primary vehicular and transit preferential street. South and west of Site N lie sections of Second, Third, Townsend and King Streets that have special designations in the Downtown Area Plan. The Embarcadero and King Street are considered primary vehicular and transit preferential as far south as the CalTrain Station, located at Fourth and Townsend Streets. Second Street south to Townsend Street and Townsend Street west to the CalTrain Station are also considered transit preferential and transit shuttle streets. Third Street has multiple designations: bicycle commuter, transit preferential, transit shuttle and primary vehicular. A new MUNI station is proposed for Second Street/King Street.[4] This site is outside both the core-auto control area and downtown parking belt. There is also a proposal to move the CalTrain station via King and Second Streets to Market Street or via The Embarcadero and Main Street to the Transbay Terminal.

The I-280 Transfer Concept Program studies traffic and transit impacts of The Embarcadero from the I-280 touchdown ramps to Broadway. The project would remove the I-280 stub between Third and Sixth Streets, widen and improve King Street, and construct new I-280 on- and off-ramps from King Street.

The Embarcadero Roadway Project would signalize 19 intersections and 10 mid-block crosswalks along The Embarcadero and King Streets.[5] Two rail transit lines are also planned along The Embarcadero: The MUNI Metro extension and the F-Line extension. The MUNI Metro extension would extend from the existing Market Street subway turnaround along The Embarcadero, travelling on surface tracks to King Street and terminating at King Street and Sixth Street. The F-Line would extend from Market Street on surface tracks along The Embarcadero proceeding north to the Fisherman's Wharf area.

San Francisco Mayor Art Agnos has proposed removing the existing Embarcadero Freeway (closed since the October 17, 1989, Loma Prieta earthquake) and replacing it with a sub-surface roadway.

The proposal calls for the new roadway to dip below street level near Mission Street and re-emerge at about Washington Street.

The MUNI Metro Turnaround Project would consist of an underground turnback alignment for the proposed MUNI Metro extension rail vehicles. The turnaround would not create any impacts on traffic since it is proposed to be located underground beneath The Embarcadero at Howard Street.[6]

The Mission Bay project consists of land development on both the north and south sides of China Basin Channel, bounded generally by Townsend Street on the north, Seventh Street and Pennsylvania Avenue on the west, Mariposa Street on the south, and China Basin and Third Streets on the east. The Mission Bay Plan calls for development of King Street as a four-lane street between The Embarcadero and Third Street, with two lanes westbound to Fourth Street and three lanes westbound, in the peak period, to new freeway on-ramps at about Sixth Street, and with three lanes eastbound between the freeway off-ramps and Third Street. Parking would be prohibited during peak periods to provide for three lanes eastbound in the morning and westbound in the afternoon.

TRAFFIC CONDITIONS

The 16 intersections in the immediate vicinity of the sites that would be most impacted by project vehicular traffic are shown in Table 2, page 44. Appendix A of this document presents the existing turning movements. These intersections were selected in consultation with City staff for analysis of the project traffic impacts. Existing traffic control at each of the intersections is shown on Table 2. Since most (12) of these 16 intersections are signalized or would be signalized with the completion of The Embarcadero Surface Roadway Project, capacity analysis was performed using signalized intersection capacity methods outlined in Circular 212.[7] The other four intersections which are unsignalized are analyzed by different methodologies, specifically tailored for unsignalized intersections.[8]

It is important to understand that while the signalized and unsignalized intersections are analyzed producing level of service (LOS) information, the LOS ratings are compared differently. Signalized intersection analysis looks at critical movements and delay, while unsignalized analysis studies gap

TABLE 2

STUDY AREA INTERSECTIONS

Intersection		Existing Traffic Control
1.	Broadway/The Embarcadero	Unsignalized 3-way stop[1]
2.	Howard Street/The Embarcadero	Signalized
3.	Harrison Street/The Embarcadero	Unsignalized 3-way stop[1]
4.	Folsom Street/The Embarcadero	Unsignalized 3-way stop[1]
5.	Spear Street/Bryant Street/The Embarcadero	Unsignalized 4-way stop[1]
6.	Brannan Street/The Embarcadero	Unsignalized "T" intersection[1]
7.	Townsend Street/The Embarcadero	Unsignalized 3-way stop[1]
8.	Second Street/Bryant Street	Signalized
9.	Second Street/Brannan Street	Signalized
10.	Second Street/Townsend Street	Signalized
11.	Second Street/King Street	Unsignalized 2-way stop[1]
12.	Third Street/King Street	Unsignalized 2-way stop[1]
13.	Beale Street/Bryant Street	Unsignalized 4-way stop
14.	First Street/Brannan Street	Unsignalized 2-way stop
15.	Spear Street/Folsom Street	Unsignalized 2-way stop
16.	Spear Street/Howard Street	Unsignalized 4-way stop

[1] Intersections which would become signalized in the future with The Embarcadero Surface Roadway Project.

Source: DKS Associates

acceptance and reserve capacity. Levels of service for signalized intersections are defined in Appendix A. These measures of LOS (signalized versus unsignalized) cannot be compared to one another since they relate to different criteria. Throughout the report, signalized and unsignalized intersections are broken into two separate tables for comparison. It is important for accurate evaluation of traffic impacts to compare signalized LOS to signalized LOS between analysis scenarios to assure project impacts are not masked due to traffic control changes.

All 12 of the intersections studied as signalized intersections currently operate at acceptable levels of service (LOS "C" or better). The four intersections analyzed as unsignalized intersections also operated at acceptable levels of service.

PARKING CONDITIONS

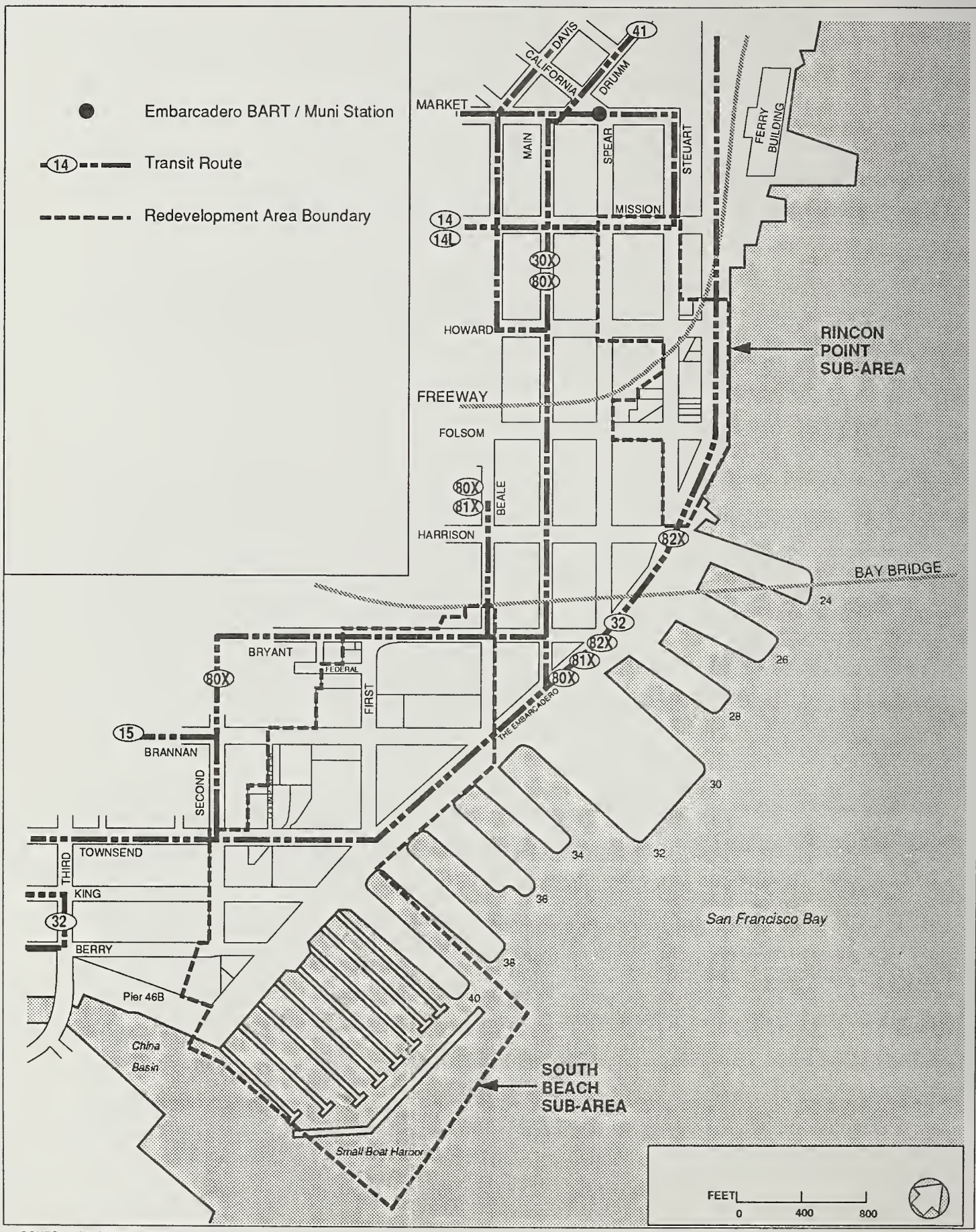
On-street and off-street parking in the project study area were surveyed.[9] Sites C and D within the Redevelopment Area presently include off-street public parking areas. Of the 272 spaces on Site C, 256 or about 95% were occupied and all 131 spaces on Site D were occupied. Three off-street parking areas located just west of Site I off of Brannan Street had all 270 spaces occupied. Site N off-street parking used by the existing Yacht Club had 80% of the 51 spaces occupied. All on-street parking spaces at Sites I and N are 100% occupied virtually the entire day. Parking in the vicinity of the project sites (both on-street and off-street) is over 90% occupied.

TRANSIT

MUNI provides local transit service with eight bus routes passing near the project sites (Figure 6, page 46). Routes 12, 15, and 76 stop along Folsom, Fremont and Howard Streets. Routes 80X, 81X and 82X are weekday, peak-period express routes running along The Embarcadero, Second Street, Bryant Street and Beale Street. Route 30X, which runs on Howard Street from The Embarcadero to Main Street, and up Main Street to Market Street, is also a peak-period express route which provides connection to the Financial District. Route 42 (the Downtown Loop) provides service to First, Second, and Fremont Streets, connecting them with the Van Ness Corridor and the Financial District. AC Transit and Golden Gate Transit provide transbay service from the Transbay Terminal located near First/Howard Streets. Additional regional (South Bay/Peninsula) service is provided by CalTrain with the terminal located at Townsend Street and

LOCAL TRANSIT SERVICE

FIGURE 6



SOURCE: EIP ASSOCIATES

89271

Fourth Street. BART is located four to ten blocks from the Rincon Point/South Beach Redevelopment Area.

In addition, there are 17 MUNI lines that provide connections from the Ferry and Transbay Terminals to various districts within the City. Route 15 (North of Brannan) travels along First Street with connections to the Financial District and also proceeds along Columbus Avenue to the Fisherman's Wharf area. Route 41 runs from the South of Market, through the Financial District, North Beach and Cow Hollow to the Presidio, via Main, Drumm and Clay Streets, Columbus Avenue, Union and Lyon Streets. Route 32 runs along Townsend Street to The Embarcadero, winding through the Fisherman's Wharf area. Route 66L travels from Second Street and Mission Street to the Parkside District area, providing only weekday, peak-period service. Route 2 runs from the Ferry Terminal to the Richmond District via Clement Street. Route 7 travels along Market Street from the Ferry Terminal to the Fillmore and Haight Districts via Market Street and Haight Street. Route 8 runs from the Ferry Terminal along Market Street to the Castro District. Routes 14 and 14L run along Mission Street from the Ferry Terminal to the Ingleside District in the southern part of the City. Route 14L provides limited service on both the weekdays and weekends with no lines running during the peak periods. Route 14X provides weekday, peak-period service from the Ferry Terminal along Mission Street to Sixth Street with connections to the southeast parts of the City. Route 21 runs from the Ferry Terminal along Market Street to the Inner Richmond-Golden Gate Park area via Hayes Street. Route 31 runs from the Ferry Terminal to the Outer Richmond-Ocean Beach areas via Turk and Balboa Streets. Route 71 provides weekday, peak-period service from the Ferry Terminal to the Outer Sunset District via Market, Haight and Noriega Streets.

In addition, MUNI also provides rail service from the Embarcadero Station to many areas of the City via lines J, K, L, M and N. The J-Line serves the Castro and Noe Valley, currently ending service at Church and 30th Streets, with an extension under construction to the Balboa Park BART Station, which should be operational by 1992. The K-Line provides service to the City College in the Ingleside District. The L-Line provides service to the Parkside District. The M-Line provides service to the City College and San Francisco State University in the Lake Merced area. The N-Line provides service to the Outer Richmond District-Ocean Beach area.

PEDESTRIANS

Pedestrian volumes in the project vicinity are generally light, with peak activity occurring during the noon and P.M. peak period. Presently, the largest pedestrian activity near the project sites is generated in the evening peak when commuters pick up their parked cars to return home. Pedestrian traffic was observed for a one-hour period at four locations during the P.M. peak hour.[10] At Site C, approximately 120 pedestrians were counted on Spear Street adjacent to the site, with most foot traffic generated by existing uses on the site. Pedestrian flow levels were observed to be open, with ten-foot-wide sidewalks and nine- to 14-foot-wide crosswalks. At Site D, approximately 80 pedestrians were observed along Beale Street adjacent to the site where sidewalks are about seven feet wide. Pedestrian flow level is open throughout the peak. At Site I, approximately 20 pedestrians were observed during the P.M. peak hour on the sidewalk of Brannan at First Street, which is about eight feet wide. Pedestrian flow level is open at all times. At Site N, only two people were observed crossing The Embarcadero south of Townsend Street during the P.M. peak hour, with eight to 12 foot wide walking areas.

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1. San Francisco Department of City Planning, Downtown Area Plan of the Master Plan, 1984, Page II-1-43.

2. San Francisco Department of City Planning, Transportation: An Element of the Master Plan, 1984, Pages I-4-14, I-4-23, I-4-28 and I-4-29.

3. San Francisco Department of City Planning, Northeastern Waterfront Area Plan of the Master Plan, pp. 11.7.12-13.

4. Embarcadero Roadway Traffic/Transit Signal System Study, DKS Associates, June 1990.

5. Bechtel Civil, Inc., for San Francisco Department of Public Works, The Embarcadero Urban Design Study, Volume 1 Final Report, December 1988.

6. U.S. Department of Transportation, Urban Mass Transportation Administration, Muni Metro Turnaround Project, Final Environmental Impact Statement, August 1989.

7. Transportation Research Board, Transportation Research Circular 212, January 1980.

8. Transportation Research Board, Highway Capacity Manual, 1985.

9. DKS Associates, On-Street and Off-Street Parking Survey Performed on December 14, 1989, Thursday (1:30 p.m. - 3:00 p.m.), and on January 9, 1990, Tuesday (2:30 p.m. - 4:30 p.m.).

10. DKS Associates, Pedestrian Counts Conducted During the P.M. Peak Period, Saturday, December 16, 1989.

D. GEOLOGY AND SEISMICITY

The following information adds to the Geology/Seismicity Setting section on page 109 of the 1980 Final EIR.

TOPOGRAPHY[1]

The Rincon Point sub-area is on flat to gently sloping land between Rincon Hill on the south and San Francisco Bay on the northeast. The area is near Elevation 0, San Francisco Datum (SFD), which is 8.66 feet above mean sea level (MSL). Higher land is located to the south on Rincon Hill.

The on-shore portion of the South Beach sub-area is located adjacent to San Francisco Bay and extends onto Rincon Hill to the west and northwest. The lower, eastern and southern portions of the sub-area generally are flat and near elevation 0 SFD; the upper portions of the sub-area rise to about +40 feet SFD on the southeastern flank of Rincon Hill. The offshore portion of the South Beach sub-area has a maximum depth of about 35 feet.

SURFACE FEATURES

Before 1850, the Rincon Point sub-area was underwater within Yerba Buena Cove: The lower portion of the South Beach sub-area was underwater in San Francisco Bay north of China Basin. The Cove and the Bay between Rincon Point and China Basin were filled with dune sand, silt, clay, rock waste from excavations, organic material and debris. By 1852, the sub-areas were mostly dry land near sea level. Between 1867 and 1870, a sea wall was constructed to the east of the Rincon Point sub-area and south to China Basin to protect the fill. The seawall extended along the bayside of the South Beach sub-area between what is now the land portion of the Rincon Point sub-area and what is now the bay portion of the sub-area. In the bay portion of the South Beach sub-area, the piers were located over Bay muds; no filling was done in that portion of that sub-area. Between 1900 and 1915 the new seawall was further extended south of the Ferry Building to Rincon Point and South Beach, extending land area west of the seawall.

In the northern portion of the South Beach sub-area, the Franciscan Formation bedrock is exposed at the surface. Toward the south and east, artificial fill, Bay muds, clays, sand and silt increase in thickness.

GEOLOGIC MATERIALS

Most of San Francisco, including the project area, is underlain by the Franciscan Assemblage, a bedrock complex of ancient ocean floor materials compressed and uplifted along the central and northern California coast. The bedrock under the project area is composed of sandstone and shale, and is exposed on Rincon Hill at the base of the Bay Bridge foundations. Southwest of the project area is a band of severely deformed rock extending from Fort Point through Potrero Hill to Hunters Point. This band, known as the Fort Point-Potrero Hill-Hunters Point Shear Zone, is composed of serpentine and melange rocks.[2] The Shear Zone represents an area where ancient tectonic movement folded and crushed the rocks of the Franciscan Assemblage into a fairly compact mass. However, the rock mass is not uniform, and its engineering characteristics are not as consistent or generally as good as those of solid Franciscan sandstone.[3] Because the rocks of the Shear Zone dip northeast, it is probable that the bedrock in some locations deep beneath the project area consists of material from the Shear Zone.

Varying thicknesses of younger sedimentary material and artificial fill cover the bedrock in the project area. The United States Geological Survey recorded two borings in the vicinity of the project area. One boring, northwest of the project area, was located south of Market Street between Steuart and Spear Streets. The boring revealed 31 feet of artificial fill, overlying 86 feet of Bay mud and clay, which in turn overlies 146 feet of sand and clay layers. These materials are underlain by sandstone and shale bedrock of the Franciscan Assemblage. The second boring, south of the project area, was located adjacent to China Basin at the northwest end of the 3rd Street bridge. The boring revealed 45 feet of artificial fill overlying at least 57 feet of sand and clay layers.[3]

More recent subsurface investigations have revealed substantially similar materials in the project vicinity. The Hills Plaza project (FEIR 84.41E), bounded by Folsom, Steuart, Harrison and Spear Streets, is underlain by 10 to 20 feet of artificial fill, as much as 40 feet of Bay mud, and sandstone and shale of the Franciscan Assemblage. Groundwater level is at about mean sea level.[4] The

Mission Bay project, south of China Basin, is underlain by 0 to 57 feet of unengineered artificial fill, as much as 100 feet of Bay mud, discontinuous sand deposits of varying thickness, about 110 feet of old Bay clay, and the sandstone, melange and serpentine of the Franciscan Assemblage.[5]

SETTLEMENT[2]

The structural hazard posed by compressible materials are discussed on pages VI.K.7-11 of the Mission Bay EIR. That information is incorporated in the current EIR and is summarized below. Compressible materials in the project area include unengineered artificial fill and Bay mud. Settlement of several feet has occurred since unengineered fill was placed in the area beginning in the last century. Settlement will continue, although at a decreasing rate. If no additional load (from fills or structures with shallow foundations) is placed on the existing ground surfaces, and if the groundwater level does not change, the amount of settlement over the next 30 years is expected to be less than two inches where the Bay mud is no more than 60 feet thick. Similarly, settlement would be less than six inches where the Bay mud is 70 to 90 feet thick, and up to one foot where the Bay mud is more than 90 feet thick.

Differential settlement also is a problem because fills have variable compressibility rates. The amount of differential settlement also depends on the thickness of the Bay mud beneath the specific redevelopment sites. Fill has been placed to raise the ground level near warehouses to the height of loading docks. These fills are about four feet thick and add weight which increases the rate and amount of settlement. If the fill is removed, the underlying mud has been "preconsolidated" and will settle less when reloaded than it would if it had not previously been loaded.

If a load is applied too quickly the Bay mud may suddenly fail because water in the pores between the particles of clay cannot escape quickly enough to allow for compression. Normally such failure occurs soon after a load is placed on the mud.

SEISMICITY[5,6,7]

The Downtown Plan EIR provides information on Seismic Safety issues in the C-3 District of downtown (contains Site C of the proposed project). That information remains current. The South

of Market Plan EIR provides similar information for that area (contains Sites D and I of the proposed project), as does the Mission Bay EIR for its project area (adjacent to Pier 40 of the proposed project). The South of Market and Mission Bay EIRs do not provide any new data about seismic issues that establish a need for revisions in the Downtown Plan EIR information or conclusions. That information is summarized below.

In summary, the Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to potentially large earthquakes from the San Andreas and Hayward faults. Relatively more of the land in Downtown & Vicinity is subject to violent groundshaking intensity than the rest of the City because the eastern edge of the area is built on filled land. Employment growth, such as that expected in the proposed project, would result in larger numbers of persons being exposed to earthquake hazards, if a seismic event occurred during the work day. New and renovated buildings are subject to more stringent building and structural standards than are older buildings. Therefore, persons working or residing in buildings such as those of the proposed project would be safer relative to those in some older existing buildings. However, glass, and in some cases, building cladding, is expected to endanger people on the streets and sidewalks. The roadways in San Francisco and the Bay Area, including bridges, freeways, surface streets and ramps, could experience major structural damage in the event of a major seismic occurrence. Closures of these roadways could be from a few days to more than one year. MUNI, BART and CalTrain would be out of service for some time, and power outages would occur for at least one or two days. (See Mission Bay EIR, Vol. II, pp. VI.K.11-18 and 33-44; Downtown Plan EIR pp. IV.K.1-19; South of Market EIR, pp. 154-174).

The experiences of the 17 October 1989 M7.1 Loma Prieta earthquake reinforce the information provided in the above mentioned EIRs. The Loma Prieta earthquake occurred in an area that had been identified in studies by the United States Geological Survey as having a relatively high probability for experiencing an M7.0 or greater earthquake. In 1988, the USGS estimated that probability at 50 percent over the next 30 years (1988 to 2018).[8] The earthquake has been considered the United States' greatest natural disaster in terms of damage costs. Injuries and loss of life were much lower than are predicted to occur during a maximum credible earthquake on local segments of the San Andreas or Hayward faults. Communications and vital services were

disrupted in fashions similar to those expected in current earthquake scenarios projected by the California Division of Mines and Geology.[9,10]

SPECIAL GEOLOGIC STUDY ZONES

Portions of the project sites are within the Special Geologic Study Areas designated in the Community Safety Element of the Master Plan. The fill and underlying Bay mud in the project area are subject to ground failure. The portions of the project area close to sea level are subject to inundation. Design features to reduce or avoid these potential hazards are required as part of any project within the Special Geologic Study Areas.

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1. Rincon Point-South Beach Redevelopment Plan Final EIR, 80.267E, SCH #80061703, Certified November 5, 1980, pages 109-112.

2. Serpentine minerals and rocks are alteration products of rocks that formed deep in the earth. They are forced to the surface by the collision of plates of the earth's crust. Melange is a mixture of crushed fragments of all the rocks brought together during the collision.

3. J. Schlocker, Geology of the San Francisco North Quadrangle, California. U.S. Geological Survey, Professional Paper 782, 1974.

4. Richard Rodgers, Chief Engineer and Vice President, Lee and Praszker, Consulting Geotechnical Engineers and Geologists, Letter, February 17, 1984, cited from Hills Plaza Final EIR, 84.41E, SCH #84120422, certified November 14, 1985, pages A-21 and A-22.

5. Mission Bay Draft EIR Volume Two Technical Analyses, 86.505E, SCH #86070113, published August 12, 1988, pages VI.K.1-VI.K.18.

6. The Downtown Plan EIR, 81.3, SCH #84032003, certified October 18, 1984, pages IV.K.1-IV.K.19.

7. The South of Market Plan EIR, 85.465E, SCH #88081617, certified December 7, 1989, pages 154-174.

8. U.S. Geological Survey, Open File Report 88-398, Probability of Large Earthquakes Occurring in California on the San Andreas Fault System, 1988.

9. California Division of Mines and Geology, Special Publication 61, Earthquake Planning Scenario for a Magnitude 8.3 Earthquake on the San Andreas Fault in the San Francisco Bay Area, 1982.

10. California Division of Mines and Geology, Special Publication 78, Earthquake Planning Scenario for a Magnitude 7.5 Earthquake on the Hayward Fault in the San Francisco Bay Area, 1987.

E. DRAINAGE AND WATER QUALITY

The following section supplements the Hydrology Setting section on page 113 of the 1980 Final EIR.

HYDROLOGY

The Rincon Point-South Beach sub-areas are adjacent to San Francisco Bay. Pier 40 and the Small Boat Harbor, a portion of the South Beach sub-area, includes the Bay. No lakes, springs or watercourses are located in the Redevelopment Area. Most of the area is low-lying, and under natural drainage conditions would receive the runoff from the higher areas of Rincon Hill to the west. Surface runoff is greatest during the wet-weather months of November through April.

The Rincon Point sub-area is between elevation 0 and elevation +2 feet SFD. About half the land area of the South Beach sub-area is below elevation +2 feet SFD. A line from the Beale/Bryant intersection to the Second/King intersection would approximate the elevation +2 feet SFD contour. West of this line the land rises to about elevation +24 feet SFD approximately between the First/Bryant intersection and the Second/Brannan intersection. All of the Rincon Point sub-area and the east half of South Beach sub-area are in a Special Geologic Study Area for tsunami inundation hazard.[1] These areas would not be inundated by a 100-year tsunami event that occurred during the year's maximum high tide (run-up between 0 and -1 feet SFD), but would be partially inundated by a 500-year tsunami event that occurred during the year's maximum high tide (run-up between +2 and +4 feet SFD).[2]

The groundwater level in the vicinity of the two sub-areas is about at mean sea level (-8.66 feet SFD) and may vary by about one foot because of tidal influence.[3] The quality of the groundwater, with regard to potential contamination by fuel leaks or chemical spills, is unknown at this time.

WATER QUALITY

The quality of water leaving the development sites, either as runoff or as sanitary flow, is controlled by the City's Clean Water Program. The Program operates a combined system of stormdrains and sewers that deliver runoff and sanitary flows to the water pollution control plant at Islais Creek

for treatment and discharge to San Francisco Bay. Quality of discharge is monitored by the City and reported to the San Francisco Regional Water Control Board.

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1. Community Safety Element of the San Francisco Master Plan, adopted by Resolution 7241 of the San Francisco Planning Commission, September 12, 1974.

2. A. W. Garcia and J.R. Houston, Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound, U.S. Army Corps of Engineers Technical Report H-75-17, Hydraulics Laboratory, U.S. Army Engineers Waterways Experiment Station, Vicksburg, Mississippi, November, 1975.

3. Richard Rodgers, Chief Engineer and Vice President, Lee and Praszker, Consulting Geotechnical Engineers and Geologists, letter, February 17, 1984, cited from Hills Plaza Final EIR, SCH #84120922, certified November 14, 1985, pages A-21 and A-22.

F. AIR QUALITY AND CLIMATE

The following information supplements the Climate and Air Quality Setting section on page 88 of the 1980 Final EIR.

AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network that measures the ambient concentrations of six air pollutants: ozone (O^3), carbon monoxide (CO), particulates (both fine particulate matter (PM_{10}) and total suspended particulates (TSP)), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco, is currently designated a non-attainment area with respect to the federal ozone and CO standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site is shown in Appendix B, followed by the corresponding federal and/or State ambient air quality standards and related adverse effects of the major air pollutants. In 1988, San Francisco County had no violations of the federal ozone standard and one violation of the federal and State eight-hour CO standards. In 1987, there were no violations of the federal ozone standard, one violation of the federal and State eight-hour CO standards, four violations of the State standard for fine particulate matter (PM_{10}) and three violations of the previous State average 24-hour TSP standard. In 1986, there were no violations of the State ozone standard, two violations of the federal and State eight-hour CO standards, and five violations of the previous State average 24-hour TSP standard. In 1985, there were three violations of the federal and State eight-hour CO standard and five violations of the previous State 24-hour average TSP standard.

Comparison of these data with those from other BAAQMD monitoring stations indicates that San Francisco's air quality is among the least degraded of all the developed portions of the Bay Area. Prevailing west, west-northwest, and northwest winds blowing off the Pacific Ocean reduce the potential for San Francisco to receive pollutants from elsewhere in the region.

BAAQMD has conducted two CO "hot-spot" monitoring programs in the Bay Area, including San Francisco. The data from the "hot-spot" monitoring programs indicate that locations in San Francisco near streets with high traffic volumes and congested traffic flows may experience

violations of the eight-hour CO standard during adverse meteorological conditions. One CO monitoring program was conducted during the winter of 1979-80 at the intersection of Washington and Battery Streets in San Francisco.[1] The high eight-hour average concentration was 10.1 ppm, which violates the 9-ppm State and federal standards by 1.1 ppm. The high one-hour average concentration of 15 ppm does not violate the 20-ppm State standard or the 35-ppm federal standard. Another CO monitoring program was conducted during the winter of 1980-81 and included the San Francisco intersection of Geary and Taylor Streets, and at 100 Harrison Street at Spear.[2] At Geary and Taylor the observed high eight-hour average concentration was 11.5 ppm, which violates the standards by 2.5 ppm, and the high one-hour concentration was 15 ppm, which does not violate standards. At Harrison Street the observed high eight-hour and one-hour average concentrations were 7.8 ppm and 13 ppm, respectively, which do not violate standards. In December 1985, the city monitored CO and counted traffic at the Sixth and Brannan intersection. There were no violations of CO standards. Data from the "hot spot" monitoring programs indicate that locations in San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO standard under adverse meteorological conditions.

San Francisco's air quality problems, primarily CO and PM_{10}, are due largely to pollutant emissions from within the City. CO is a non-reactive pollutant and its major source category is motor vehicles. CO concentrations generally are highest during periods of peak traffic congestion. PM_{10} levels are relatively low near the coast, increase with distance inland, and peak in dry, sheltered valleys. The primary sources of PM_{10} in San Francisco are demolition and construction activities, and motor vehicle travel.

San Francisco contributes to regional air quality problems, including ozone, which affects other parts of the Bay Area. Ozone is not emitted directly from sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbon (HC) and nitrogen oxide (NO_x) emissions, which are carried downwind as the photochemical reactions occurs. Ozone standards are exceeded most often near San Jose and in the Livermore Valley, because their local topography and meteorological conditions favor the build-up of ozone and its precursors.

In 1982, motor vehicles were the source of 86% of the CO, 46% of the HC, 44% of the TSP, and 56% of the NO_x emitted in San Francisco, while power plant fuel combustion was the largest single source of sulfur oxides (SO_x), about 33% of the total.[3] These percentages are expected to apply reasonably well to current conditions.

In response to the Bay Area's ozone and CO non-attainment designations, the Association of Bay Area Governments (ABAG), BAAQMD, and the Metropolitan Transportation Commission (MTC) prepared and adopted the 1982 Bay Area Air Quality Plan, which establishes pollution control strategies to attain the federal ozone and CO standards by 1987 as required by federal law.[4] These strategies were developed on the basis of detailed subregional emission inventories and projections, and mathematical models of pollutant behavior, and consist of stationary and mobile source emission controls and transportation improvements. The BAAQMD, MTC, Air Resources Board, Caltrans, and California Bureau of Automotive Repair (a state agency), and the U.S. Environmental Protection Agency each have specific responsibilities for implementation of the various strategies. Now that 1987 has passed and many states, including California, still violate federal standards, the EPA has adopted an interim policy. The EPA's policy would become moot if Congress amends the Clean Air Act to specify a different course of action, but as of May 1990, Congress had not been able to reach agreement on such a revision. The Sierra Club and Citizens for a Better Environment challenged implementation by MTC and BAAQMD of the region's portion of the State Implementation Plan; the U.S. District Court issued an order for these agencies to implement, via regulation, all plans set forth in the 1982 Bay Area Air Quality Plan.

In 1988, the California Legislature enacted AB 2595 (Sher), the California Clean Air Act. AB 2595 was signed into law by Governor Deukmejian, and it became effective January 2, 1989. This legislation requires areas of the state that exceed California air quality standards to plan for the eventual attainment of State standards. A revised Air Quality Management Plan is currently being prepared by the BAAQMD, MTC and the Association of Bay Area Governments (ABAG) to attain California air quality standards.

CLIMATE

San Francisco has a relatively moderate climate with temperatures rarely exceeding 90 degrees Fahrenheit or dropping below freezing. The average daily maximum and minimum are 62.4 and

50.9 degrees, respectively, with the warmest and coldest months being September and January. Fog and low cloud cover are characteristic of San Francisco along with gentle breezes, particularly during the summer months (May through September). Wind frequencies and speeds are lower during the spring, fall and winter months. The mean windspeed during the summer is 8 miles per hour (mph) while in winter it is 4.8 mph and spring and fall is 6 mph. A number of variables influence pedestrian thermal comfort levels including temperature, humidity, clothing, level of activity, windspeeds and presence or absence of direct sunlight. Physical effects that cause pedestrian discomfort are wind-blown dust, the blowing of hair and flapping of clothes, and interference with contact lenses. These physical effects all begin to occur at a windspeed of about 11 mph.

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1. Association of Bay Area Governments (ABAG), AQMP Tech Memo 33, "Summary of 1979/1980 CO Hot-spot Monitoring Program," Berkeley, California, June 1980.

2. ABAG, AQMP Tech Memo 40, "Results of the 1980/1981 Hot-Spot Monitoring Program for Carbon Monoxide," Berkeley, California, January 1982.

3. Bay Area Air Quality Management District (BAAQMD), "Base Year 1982 Emissions Inventory, Summary Report," San Francisco, California, November 1, 1982.

4. ABAG, BAAQMD and Metropolitan Transportation Commission (MTC), 1982 Bay Area Air Quality Plan, Berkeley, California, December 1982.

G. NOISE

This information expands upon the Noise Setting section on page 96 of the 1980 Final EIR.

INTRODUCTION

The human response to environmental noise is subjective and varies considerably from individual to individual. The effects of noise can range from interference with sleep, concentration, and communication, to the causation of physiological and psychological stress, and, at the higher intensity levels, to hearing loss. Several examples of the noise levels associated with common situations are listed in Appendix C, Table 1, given in A-Weighted decibels (abbreviated dBA; an explanation of the decibel scale and other essential aspects of acoustics can be found in Appendix C).

Environmental noise fluctuates in intensity over time, and several descriptors of time-averaged noise levels are in use. The three descriptors most commonly used are L_{eq}, L_{dn}, and CNEL. L_{eq}, the energy equivalent noise level, is a measure of the average energy content (intensity) of noise over any given period of time. L_{dn}, the day/night average noise level, is the 24-hour average of the noise intensity, with a 10 dBA "penalty" added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community noise equivalent level, is similar to L_{dn}, but adds a 5 dBA penalty to evening noise (7 p.m. to 10 p.m.). In situations where motor vehicles are the dominant source of noise, a useful rule of thumb for relating these three quantities is to remember that the L_{eq} for the peak commute hour is usually about equal to the L_{dn} and CNEL.

REGULATORY BACKGROUND

In order to limit population exposure to physically and/or psychologically damaging noise levels, the State of California, the various County governments, and most municipalities in the State have established standards and ordinances to control noise.

The California Department of Health Services' (DOHS) Office of Noise Control has studied the correlation of noise levels and their effects on different land uses. A summary of Land Use Compatibility Standards for Community Noise is presented in Appendix C, Table 2. This table

shows the noise levels (in this case, L_{dn}) below which the land use would be compatible with the exterior noise environment with no special noise insulation requirements (e.g., for residential uses, this would be an L_{dn} of 60 dBA). Table 4 also shows the noise levels above which the identified land use would be considered incompatible due to the difficulty of providing the needed noise insulation (e.g., for residential uses, this would be an L_{dn} of 75 dBA). Table 4 indicates that there is often a large range of exterior noise levels in which different land uses could be made compatible if necessary noise reduction features are included in the design of a proposed project (e.g., for residential uses, L_{dn} levels ranging from 60 dBA to 75 dBA could be accommodated by installing adequate insulation).

Title 24 of the California Administrative Code establishes standards governing interior noise levels that apply to all new multi-family residential units in California. These standards require that acoustical studies be performed prior to construction at building locations where the existing L_{dn} exceeds 60 dB. Such acoustical studies are required to establish mitigation measures that will limit maximum L_{dn} noise levels to 45 dBA in any inhabitable room. Although there are no generally applicable interior noise standards pertinent to all uses, many communities in California have adopted an L_{dn} of 45 dBA as an upper limit on interior noise in all residential units. The U.S. Department of Housing and Urban Development (HUD) has set an L_{dn} of 45 dBA as its goal for interior noise in residential units built with HUD funding.

SITE C

The noise environment on this site is dominated by traffic noise emanating from Folsom, Steuart and Spear Streets, and from the Embarcadero Freeway. The Embarcadero Freeway has been closed since the October 17, 1989, Loma Prieta earthquake and the noise environment on this site is significantly different than when the Embarcadero Freeway is opened. Additionally, construction of a new office building on the south side of Folsom, opposite the site, is currently generating a significant amount of noise. Because the noise environment currently existing on the site is not typical, no noise measurements were conducted.

Based on similar noise measurements around the Embarcadero Freeway, it is estimated that noise levels on this site would be as high as an L_{dn} of 70 to 75 dBA.[1]

SITE D

This site is exposed to noise generated primarily by traffic on the Bay Bridge. A 24-hour noise measurement was conducted on the site. The monitor was located 100 feet back from the centerline of Bryant Street, near the back of the site at a height of 30 to 40 feet above Bryant Street and about 40 feet below the lower deck of the Bay Bridge. The L_{dn} at this location was measured to be 74 dBA. A simultaneous measurement was conducted at a distance of 35 feet from the centerline of Bryant Street and at grade with Bryant Street. At this location the noise levels generated by traffic on the Bay Bridge are higher than at the location closer to the bridge. This is because the portion of the site adjacent to the Bay Bridge does not receive as much reflected energy off the upper deck as does the site below. The L_{dn} closer to Bryant Street is 76 dBA.

SITE I

This site is exposed to noise emanating primarily from Brannan Street and Colin P. Kelly, Jr. Street. First Street dead ends south of Brannan Street and does not carry a significant amount of traffic. A noise measurement was conducted at the back of the existing sidewalk along Brannan Street, typical of the building setbacks in this area. This 15-minute measurement, conducted on the afternoon of December 13, 1989, indicated that the average noise level is about 66 dBA. Based on the hourly variation in noise level measured next to the Bay Bridge, we estimate that the L_{dn} is about 69 dBA along the Brannan Street frontage. Noise levels along Collin P. Kelly, Jr. Street would be lower as this street receives less traffic.

SITE N

Noise levels at Pier 40 are dominated by traffic on The Embarcadero. A noise measurement was conducted on the afternoon of December 13, 1989; the measurement was made at a distance of 51 feet from the centerline of the near lane of The Embarcadero. This is typical of the existing setback of existing warehouse buildings. The average noise level was 70 dBA. The major noise sources were trucks on The Embarcadero. Based on the distribution of the hourly noise levels measured next to the Bay Bridge, the L_{dn} is estimated to be 73 dBA.

1. I-280 Transfer Concept Program EIR, California Department of Transportation, City and County of San Francisco, Metropolitan Transportation Commission, September 1984.

H. TOXIC AND HAZARDOUS MATERIALS

The following information is a new section to be added to the 1980 Final EIR, and should follow the Noise Setting section.

REGULATORY FRAMEWORK

San Francisco Public Health Code

The San Francisco Department of Public Health is the local agency that reviews fuel leak cases in San Francisco. Ordinance No. 443-86, also known as the Underground Tanks Ordinance, added Article 21 to the San Francisco Public Health Code which established a comprehensive system for processing permits, and for monitoring the use and disposal of hazardous materials. The ordinance also established specific design and construction standards for underground storage tanks. The ordinance outlines provisions for handling abandoned hazardous waste storage facilities, as well as for maintenance of existing facilities.

Persons owning, leasing, or renting property who have reason to believe that an abandoned storage facility is located on their property must identify such a facility within six months of such knowledge. If an abandoned storage facility is identified, a plan for closing or upgrading the facility must be filed within 30 days. Any person who stores hazardous materials is responsible for the clean-up of any unauthorized or uncontrolled releases. The provisions of this ordinance apply also to any establishment or storage facility owned or leased by the State or federal government.

San Francisco Public Works Code

Article 20, as amended by Ordinance 348-88, Analyzing the Soil for Hazardous Wastes (also known as the Maher Ordinance), requires that a site history, soil sampling, and chemical analysis be performed before a building permit can be obtained. This requirement applies to property bayward of the historic high tideline and for which more than 50 cubic yards of soil will be disturbed. Most of the Redevelopment Area is included in this specified area. Other areas may be subject to the provisions of the Ordinance if designated by the Director of Public Works. Site history and soil analysis may include adjacent properties within 100 feet of the property line of the subject site. The Hazardous Soils Analysis Ordinance requires that a history of the site proposed for disturbance be prepared by a recognized historian, that the soil be sampled by a registered engineer or

engineering geologist, and that the soil samples be analyzed by a State-certified laboratory for the presence of specified hazardous materials. The site history and soil analysis must be submitted to the Directors of Public Works and Public Health, and approved by the Director of Public Health, prior to issuance of the building permit application. In addition, a statement must be submitted, indicating whether the site is listed on the National Priorities List of hazardous waste sites published by the Environmental Protection Agency (EPA); or listed as a hazardous substance release site by the California Department of Health Services. If the concentration of any hazardous waste in the soil samples exceeds established quantitative standards, the applicant must have a clean-up plan prepared by a qualified person, such as a soils engineer, who is certified by the State. Once site clean-up is completed, certification of clean-up is submitted to the Director of Public Health for review, a building permit may be issued.

San Francisco Bay Regional Water Quality Control Board (RWQCB)

The RWQCB requires all sites where release of waste has occurred to be fully investigated, including both soils and groundwater, and cleaned up to background levels, unless otherwise determined by the Board. Such waste is broadly defined by the California Water Code. In determining clean up procedure, the Board utilizes the standards from the Sources of Drinking Water Policy contained in the Water Quality Control Plan of 1986.

The RWQCB maintains a list of registered underground storage tanks at the direction of the State Water Resources Control Board (SWRCB). Leaking underground storage tanks must be reported to the RWQCB. Permitting and closure of underground storage tanks in San Francisco is done by the City Health Department, as described above, under the direction of the RWQCB. Clean up of any soil or groundwater contaminated by leaking tanks is conducted by a qualified hazardous waste disposal company, and is monitored by the RWQCB.

Department of Health Services

The Department of Health Services (DOHS) is the primary State agency regulating public health, including hazardous materials and wastes. Because the Redevelopment Area has a long history as an industrial area, it is possible that hazardous wastes exist within the Redevelopment Area, and that portions of the Redevelopment Area would fall under the regulatory jurisdiction of DOHS.

Under Title 22, Division 4, Chapter 30 of the California Administrative Code, Hazardous Waste Control Law of 1972 (HWCL), DOHS is empowered to manage hazardous wastes by regulating generators, transporters, and disposers of materials defined as hazardous wastes. A generator, defined as a person whose act or process produces a hazardous waste or whose act first causes a material to become subject to regulation, is obligated to determine if a waste is hazardous (and to determine if wastes do, in fact, exist on the generator's property). Through its Uniform Hazardous Waste Manifest, DOHS ensures that generators, transporters, and disposal sites all conform with existing regulations.

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) is the primary federal agency involved in regulating hazardous materials and hazardous wastes. Created in 1970 to coordinate federal environmental programs and enforce federal environmental regulations, EPA is charged with administering the Resource Conservation and Recovery Act of 1976 (as amended by the Hazardous Solid Waste Act of 1984, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or "Superfund"), and the Superfund Amendments and Reauthorization Act of 1986 (SARA)).

RCRA, as it is known, is a prescriptive statute that created a major new federal hazardous waste regulatory program. RCRA prohibited open dumping, established definitions of hazardous wastes, and established requirements for transportation, treatment, storage, and disposal of such materials. Its 1984 amendments severely limited land disposal, set a 1990 deadline for promulgation of land disposal restrictions for all hazardous wastes, and established regulations for existing and new underground storage tanks containing hazardous materials. As with its other programs and regulations, EPA is committed to delegating its responsibilities in the areas of hazardous wastes and underground storage tanks to State (DOHS, SWRCB) agencies.

If portions of the Redevelopment Area were found to be contaminated with hazardous wastes, they would become subject to the federal RCRA regulations, as well as parallel State regulations.

CERCLA and SARA, as they are known, are respectively the original federal Superfund (1980) and the Superfund amendments and reauthorization (1986). Those Acts provide the EPA with

authority to investigate hazardous substance releases, to clean up sites on the basis of EPA's Hazard Ranking System, to create funds for site remediation and victim compensation, and to determine rules of liability which favor compensation. SARA also focuses on the need for emergency preparedness and "community right-to-know," which relates to the community's access to hazardous waste information on industrial processes.

A number of industries historically present in the Redevelopment Area could have used, generated, or otherwise been involved with hazardous materials. Those include major industries involved with petroleum processing storage, paint products, ship building, and railroad facilities. In addition, a variety of minor industries that may have used, produced, or stored smaller quantities of hazardous materials were active in the Redevelopment Area. A more detailed description of past uses in the area is included in Section I, Historic and Archaeological Resources.

I. HISTORIC AND ARCHAEOLOGICAL RESOURCES

This information supplements the Historic and Archaeologic Aspects Setting section on page 118 of the 1980 Final EIR.

INTRODUCTION

A significant amount of baseline data concerning the history and development of the Rincon Point-South Beach areas has already been collected through repeated, systematic archival study. In fact, since 1977, there have been no less than 12 separate historical and archaeological reports which have addressed the development and cultural resources potential of Rincon Point and/or South Beach.[1]

Perhaps the most extensive of these many projects was the 1976-1977 archival survey of the San Francisco waterfront from the Marina district to China Basin. The survey was conducted by Roger Olmstead, Nancy Olmstead and Allen G. Pastron under the auspices of the San Francisco Wastewater Management Program. The resulting report, San Francisco Waterfront: Report on Historical Cultural Resources, provides a detailed evaluation of the history of the waterfront--including Rincon Point and South Beach--from prehistoric times through the twentieth century.[2] The report concludes with the identification of specific sites along the waterfront where, based on an analysis of the archival data, potentially significant cultural resources might be encountered, as well as recommendations for archaeological testing procedures.

CULTURAL/HISTORICAL RESOURCES

There are no records on file at the Northwest Information Center at Sonoma State University, revealing any prehistoric sites in the project area.

From 1776 until 1848, during the Spanish, Mexican and Early American Periods, all of the Rincon Point-South Beach research area remained in a completely natural state, for the most part, submerged beneath San Francisco Bay. During this period there was some recreational activity west of First Street and at Rincon Point, but there is no record of any residential, commercial or industrial use of the area.

As with many parts of San Francisco, expansion south of Market Street took place during the Gold Rush. The first habitation of Rincon Point dates from November, 1849. Although a growing population emerged south of Market Street, the project site remained mostly in a natural state. Two concentrations of cultural activity took place in the 1850s within the project area: a) a Chinese fishing village on the beach along the line of First Street, between Bryant and Brannan Streets and, b) Henry Tichenor's Marine Railway and Drydock at the foot of Second Street in South Beach. By the mid-1850s an intricate web of wharves and piers began to project bayward from Rincon Point.

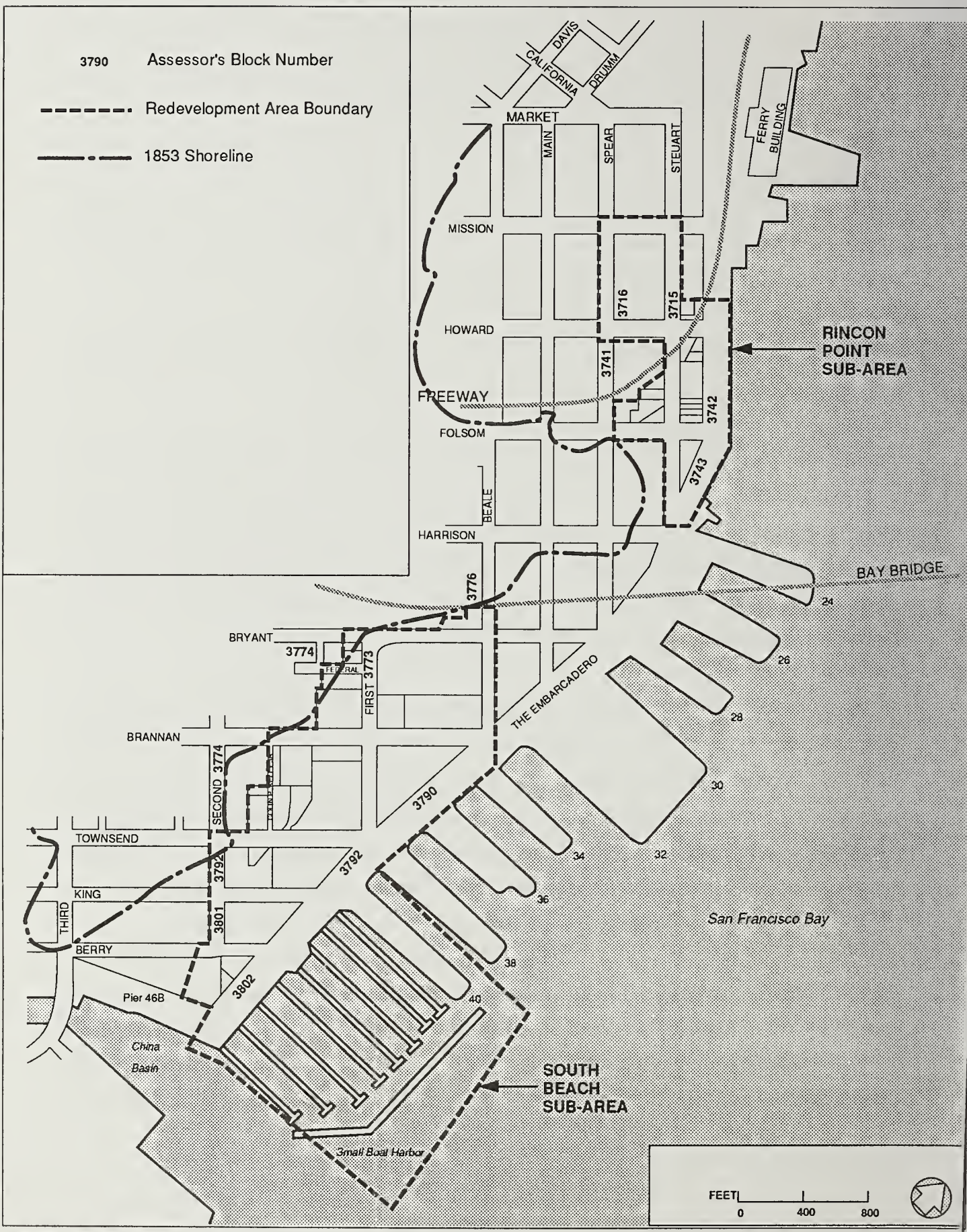
Between 1849 and 1857 San Francisco was the scene of a building and population explosion. The area south of Market Street was uninhabited and the natural topography consisted of numerous sand hills, some reaching 100 feet in height. During this period a shipbreaking industry was begun near Rincon Point in which old ships were broken up for their wood and metal fastenings. The ships had been left to rot in the harbor to the north (Yerba Buena Cove), the crews having abandoned them for a chance in the gold fields. Although there was considerable residential and economic development in the general project vicinity by the middle 1850s, both Rincon Point and the South Beach area were unaffected, both remaining submerged beneath the waters of the Bay (see Figure 7, page 72).

From 1858 to 1886, extensive filling, grading and development took place within the project area. With one exception, all of the development sites were brought up to grade by landfilling. The only portion of the project site subjected to a substantial amount of cutting was Development Site F; in its natural state, the southwestern corner of First and Bryant Streets was covered by a steep sand hill that began a few feet west of the original shoreline and rose sharply to a crest of approximately 100 feet. In about 1866, this sand hill was cut down, and approximately 300,000 cubic yards of material was removed and used for fill in water lots near the foot of Brannan Street.

For the most part, cutting, filling and street grading within the present Redevelopment Area began about 1860 and continued throughout the remainder of the 19th century. Site N is the single portion of the Redevelopment Area that is located east of the Embarcadero; although extensive dredging has occurred within the confines of Site N, the area has never been filled or graded.

1853 SHORELINE

FIGURE 7



SOURCE: EIP ASSOCIATES

Most of the material used for fill during the 1860s came from leveling sand hills in the area; however, by the 20th century, this source had been depleted, and landfill became a less consistent composition than that in the 1860s. For a while, old wooden sailing ships, and later debris from the 1906 earthquake was used as fill; other fill came from quarrying and leveling operations elsewhere, ballast, hay bales, and cement sacks.

By the mid-1850s to early 1860s a number of wharves began to project bayward from the Rincon Point shoreline. This was the first step in filling in the Bay around Rincon Point and South Beach. Most of the fill either came from the hills surrounding the area or the ships left from the Gold Rush period. Over fifty ships were known to have been broken up in the vicinity of Rincon Point.[3]

From the early 1860s onward, lumber yards, warehouses, foundries and coal yards were the most common business ventures operating at Rincon Point. The area also contained numerous sailors' boarding houses, restaurants and saloons. The South Beach area was almost exclusively occupied by warehouses and large commercial facilities associated mainly with the Pacific Mail Steamship Company. There were also two coal gasification manufacturing plants on King Street between Second and Third Streets, outside of but adjacent to the South Beach sub-area.

The pattern for both Rincon Point and South Beach changed little until the 1906 earthquake and fire in San Francisco. This event brought changes to all of San Francisco and the project area was not excluded from this change. Between 1900 and 1915 the new seawall was extended south of the Ferry Building to Rincon Point and South Beach. The land west of the seawall was filled with whatever materials were at hand, principally sand from nearby hills, but the fill included old abandoned ships.

Uses throughout the Redevelopment Area since the turn of the century include many industrial tenants, including rail yards, vegetable oil manufacturers, ship repair shops, automobile storage and repair, paint and chemical storage, and other warehousing. By the early 20th century, most of the lumber yards in the Rincon Point area had been replaced with machine shops and other light industrial enterprises including blacksmiths, ship riggers, boat builders, and plumbers and electricians shops.

The area has undergone considerable change since 1906 but several of the old warehouses still exist as reminders of the past. Most of the artifacts likely to be uncovered in the Project Area covered by this report would be old hulls, with the exception of the Chinese fishing village which was located in sites E, F and part of G of the project.[4] The bulk of the area under question was filled with material from the several sand hills in the immediate project vicinity.

Archival research suggests that there was only one concentration of people working and living in immediate proximity to Rincon Point, a Chinese fishing village. The village was located a few feet above the natural shoreline, encompassing all of Site F, the northwestern part of Site E (where Archeo-Tec found evidence of the village)[5], and, perhaps, the northeastern part of Site G of the Rincon Point-South Beach project area. This would put the village along the line of First Street, between Brannan and Bryant Streets.

Near the southeastern corner of Second and Townsend Streets, Henry Tichenor built a marine railway and drydock in the mid-1850s. This site would be outside the current project and would likely not be impacted by the project. Within the confines of Site L, there is a good chance that a Gold Rush sailing ship is buried.[6] The vessel in question was probably put into place at Tichenor's ways during the mid-1850s and was utilized as a storage shed until at least 1868. It is not known whether the hulk was removed or simply used as landfill.

There are documented remains of a nineteenth century sailing ship, the whaler Lydia, buried along the line of King Street, near the Embarcadero, at the southeastern perimeter of Site K. The vessel's midsection was removed in 1978 and stored at Fort Mason. However, the bow and stern sections were neither exposed nor subject to analysis during the 1978 archaeological program which resulted in the removal of the mid-section, and still remain submerged at the site.[7]

Part of the Project Area lies in an area first proposed as a historic district in 1985. The area was adopted by the Board of Supervisors on March 12, 1990. The area, called the South End Historic District, consists of 73 Assessor's lots and adjacent rights-of-ways on the southern waterfront. These properties face on Bryant, Brannan, Townsend, King, First, Second, Third, Colin P. Kelly, Federal, South Park and Stanford Streets.

For decades after the 1849 Gold Rush, San Francisco was the principal seaport and connection with the outside world for California and the West Coast. The development of warehouses over a 60-year period along the southern waterfront provides a view of architectural and technological responses to the rapid changes of a growing industrial nation, State and city. The interdependence of architecture and history can be traced from the evolution of warehouse forms along the southern waterfront. The South End Historic District contains a concentration of buildings from almost every period of San Francisco's maritime history. This rich diversity and concentration of warehouse architectural forms provides the greatest rationale for designating the proposed district for preservation.[8]

Perhaps the most important building in the area is the Oriental Warehouse, located on First Street between Townsend and Brannan Streets. The Oriental Warehouse was built in 1867 for the Pacific Mail Steamship Company to house the exotic commerce unloaded at their new docks at the end of First Street. Founded in 1847 in New York to carry mail between the east and west coasts, the Pacific Mail Steamship Company grew rich in the Panama-San Francisco Gold Rush traffic. The company began regular trans-Pacific service in 1867 and by 1872, Pacific Mail Steamship Company was the largest private employer in San Francisco.[9] The opening of the Pacific Mail Steamship Company Dock changed the face of the South Beach area from a beach backwater to one of San Francisco's most vibrant commercial centers.

The Oriental Warehouse is the oldest building in the South End Historic Warehouse District and activities associated with this warehouse have made a contribution to the culture of San Francisco. Commerce between California and Asia was begun from this building which then adjoined the Pacific Mail Steamship wharf. The Oriental Warehouse (located on Site I-1) is a reminder of this period of the City's development.

Other buildings in the project area which have been found to be potentially eligible for the National Register of Historic Places are Hooper's South End Grain Warehouse, Dunn Instruments Building and the Cape Horn Warehouse. All these buildings (including the Oriental Warehouse) are located in the South End Historic Warehouse District. The architecture, warehouse style of the late 19th century, represents a time in the City's history when the waterfront and port activities

comprised the principal focus of the City's economy. These warehouses are almost all that exists of that period of San Francisco history.

The Pier 42 bulkhead structure located within Site N is an historic property determined eligible for the National Register of Historic Places.

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1. The introductory material is taken from Rincon Point South Beach: Report on Historical Cultural Resources, Allen G. Pastron, Archeo-Tec, for San Francisco Redevelopment Agency, May, 1985.

2. Roger Olmstead, Nancy Olmstead and Allen Pastron, San Francisco Waterfront: Report on Historical Cultural Resources, prepared for the San Francisco Wastewater Management Program, December, 1977.

3. Albert Harmon, Harlan Soeten and Karl Kortum, Gold Rush Vessels, Beached, Scuttled and Broken Up, Manuscript on file at the San Francisco Maritime Museum, 1963.

4. Some Chinese artifacts were found at the Hills Brothers site, but were attributed to Chinese workers at the site who may have lived at the Chinese fishing village. The artifacts were not associated with the village in any direct way. They do not define the village limits. Based on EIP Associates telephone communication with Alan G. Pastron, President of Archeo-Tec, July 26, 1990.

5. EIP Associates telephone communication with Dr. Allen G. Pastron, Ph.D., President, Archeo-Tec, July 26, 1990.

6. Op. Cit., Pastron, p. 89.

7. Op. Cit., Pastron, pp. 86-88.

8. Paul A. Lord, Jr., A Proposal for a South End Historic District, Prepared for the Landmarks Preservation Advisory Board, July 17, 1989.

9. Taken from the Heritage Newsletter, Vol. XVII, No. 4, Fall 1989, pp. 1 and 15.

IV. ENVIRONMENTAL IMPACTS

A. LAND USE AND ZONING

Since certification of the Rincon Point-South Beach Redevelopment Plan Final EIR on November 5, 1980, new information has become available regarding the cumulative impacts of downtown growth. This new information has been published in the Downtown Plan EIR, the South of Market Plan EIR, and the Mission Bay EIR. The new cumulative land use impacts information is incorporated by reference and summarized below, pursuant to CEQA Sections 21061 and 21100.

New project-specific land use information is included in this supplement as a result of the area's being partially redeveloped since certification of the 1980 Final EIR and as a result of the proposed amendment to the Plan. Thus, the following section adds to the Land Use, Zoning, Visual and Aesthetic Impacts sections on pages 35-43 of the 1980 Final EIR.

CUMULATIVE CONTEXT

The Downtown Plan EIR included forecasts of amounts of space of various types that would be built in the C-3 District and the amount of employment growth likely in the Downtown between 1984 and 2000. These forecasts were not available when the Rincon Point-South Beach EIR/EIS was certified in 1980. The forecasts of total space in the year 2000 were about 125,243,000 gross square feet (gsf) in all uses including about 78,900,000 in office uses. Total employment in the C-3 District was forecast to be about 372,000 persons in 2000.

The Mission Bay EIR (86.505E) and the South of Market EIR (85.463E) include revised forecasts of space by use for the C-3 District and for the South of Market area; the Mission Bay EIR also includes forecasts for the rest of the Downtown & Vicinity. The Rincon Point-South Beach Redevelopment Area is included in the Downtown & Vicinity.

These new forecasts account for the decline rather than growth in employment in the C-3 District and elsewhere in the Greater Downtown during the early 1980s, provide new forecasts of space expected over the timeframe, and account for specific buildings approved or under construction since the Downtown Plan EIR forecasts were prepared. The forecasts go beyond known and proposed building space, to forecast space growth and absorption and employment growth for a particular timeframe. The forecasting method and background is described in the Downtown Plan EIR (pp. IV.B.1-8, IV.B.12-43, IV.B.54a-61, and Appendices G and H). The method was not changed in forecasts prepared for the South of Market and Mission Bay EIR analyses, but several changes were made in the analysis and results.

Baseline data providing existing employment and space in the analysis area were updated to 1985, resulting in the changes in forecasts for future C-3 District employment and space. Specific forecasts were also prepared for areas outside the C-3 District, first for the South of Market area and then for Mission Bay and the rest of the Downtown & Vicinity. Finally, for Mission Bay purposes only, employment and space growth and residence patterns were forecast on a regional basis for the estimated Mission Bay buildout year of 2020. The forecasts of future office space and employment, and an explanation of the methods used, can be found in the South of Market EIR, pp. 66-77 and Appendix B, and in the Mission Bay EIR Vol I, p. II.31, Vol. II. pp. VI.B.13-23, VI.B.38-79, VI.B.106-112, and VI.B.119-123, and Vol. III, Appendix B (see especially Mission Bay EIR Appendix B, pp. XIV.B.24-30 for a comparison to the Downtown Plan EIR forecasts).

In summary, the forecasts show about 94,459,000 to 94,884,000 gsf of occupied office space in the Downtown & Vicinity in the year 2000. The range is based on different amounts of office space in Mission Bay, depending on the development program approved and built. This is an increase of about 25,000,000 to 26,000,000 gsf over the amount existing in 1985. The forecast accounts for demolition and new construction and for conversion of existing buildings from non-office to office uses in the future. It also accounts for absorption of several million gsf of office space vacant in 1985 and another several million approved or under construction as of 1985. A five percent vacancy rate is assumed in the year 2000. A relatively small amount of the total space would be proposed and approved between 1986 and 1997 (to be built and absorbed by 2000). (See Mission Bay EIR, Vol. III, pp. XIV.B.37-41). About 75% of the office space would be in the C-3 District.

Development allowed under the proposed Plan Amendment would contribute of about one-half of one percent of the total future amount of office space in the Downtown & Vicinity.

LAND USE

Table 3, page 80 lists the estimated existing area by use within the Redevelopment Area, the estimated area by use as a result of development allowed under the proposed Plan Amendment, and calculates the proposed change.

On sites that have not yet been redeveloped, existing buildings and surface parking would be demolished and replaced with new structures, with the exception of the Oriental Warehouse, the Japan Street Warehouses, the Cape Horn Warehouse, and the Pier 40 shed, which are proposed for retention and rehabilitation. Also, the Longshoremen's Union Building on Site M would be retained.

The largest change in land use would be the loss of about 530,000 gsf of industrial space. The existing 1980 Redevelopment Plan would result in the same amount of loss of industrial space; thus, the amended Plan does not reflect a change in public policy regarding industrial land use. At full build-out of the proposed Amended Redevelopment Plan, there would be no industrial space within the Redevelopment Area unless Site G were retained for its alternate industrial use. Development allowed under the proposed Plan Amendment would continue the pattern of industrial uses moving to southern parts of or out of the City and being replaced with residential or other uses.

There is currently approximately 250,000 gsf of surface parking use throughout the Redevelopment Area. Under the proposed Plan Amendment, this use would be reduced to about 80,000 gsf, and would be limited to surface parking on Pier 40 and within Site M. There would be no vacant undeveloped land within the Redevelopment Area after buildout of the proposed Amended Plan; however, there would be about 510,000 gsf of park space. With the exception of the indoor and outdoor open space at Rincon Plaza, no public parks currently exist within the Redevelopment Area.

TABLE 3

EXISTING AND ESTIMATED (2000) DEVELOPMENT
UNDER RINCON POINT-SOUTH BEACH REDEVELOPMENT PLAN AMENDMENT

Use	Existing	Proposed	Change
Housing (units)	1,720	2,890-3,010[1]	1,170-1,290
Office (gsf)	360,000	848,000	+488,000
Retail/Restaurant/Service (gsf)	570,000	657,000-814,500[2]	+87,000-244,500
Industrial (gsf)	530,000[3]	0	-530,000
Surface Parking (gsf)	250,000	80,000	-170,000
Vacant Land (gsf)	40,500	0	-40,500
Marine Support (gsf)	1,000	33,000	+32,000
Public Parks (gsf)	0	510,000	+510,000

[1] Actual number would depend on amount of units built on sites with alternate land use designations.
[2] Actual number would depend on amount built on sites with alternate land use designations. Assumes 5,000 gsf of allowable neighborhood retail space per housing development.
[3] Includes industrial and industrial/office mix, and exterior industrial storage.

There are currently about 1,720 housing units in the Redevelopment Area. Full buildout of the proposed Amended Plan would result in the addition of 1,170 to 1,290 units, for a total of 2,890 to 3,010 units.

Development allowed under the proposed Redevelopment Plan Amendment would include an increase of about 87,000 to 244,500 gsf of retail use. The actual amount of these land uses would be dependent on specific proposals for development sites with alternate land use designations. The amount of retail space estimated assumes that each housing development would include up to 5,000 gsf of ground-floor neighborhood-serving retail, as allowed in the Redevelopment Plan.

Within the Redevelopment Area there is currently about 360,000 square feet of office space; buildout of the proposed Plan Amendment would result in this number increasing by about 488,000 gsf, to total 848,000 gsf.

There is currently about 1,000 gsf of marine support use on Pier 40; the proposed Plan Amendment would allow up to 33,000 gsf of marine support use. No hotel use currently exists within the Redevelopment Area, and none is proposed by the Plan Amendment.

The proposed Plan Amendment would change the land use designation of four sites within the Rincon Point-South Beach Redevelopment Area. Site C-1 would be developed with approximately 500,000 gsf of office space, replacing the 270 space surface parking lot and the two-story, approximately 11,000 gsf heavy commercial/office building that currently exist on the site. The intensification of office use at the site which would be allowed under the proposed Plan Amendment would continue high-rise office development in the site vicinity, which has taken place along Spear Street, Mission Street and Main Street, north of the freeway ramp. Office use at this site would be compatible with the Hills Brothers Plaza project currently under construction, across Folsom Street from Site C-1. Additional office space in this area not yet approved for development would be included in the Department of City Planning annual accounting of office space that can be approved by the City under Sections 320-325 of the City Planning Code. As office space in the Redevelopment Area was approved, pursuant to the revised Plan, the amount of space available for review and approval by the City Planning Commission would be reduced, such that the 475,000-gsf allocation would not be exceeded in one year. Because the site is in a

Redevelopment Area, office proposals would not be required to enter the competition established by Section 322 of the City Planning Code and implemented by the Department of City Planning and the Planning Commission.

The proposed Plan Amendment would change the designated use of Site D from commercial to include housing. The Redevelopment Agency is proposing to construct approximately 24 units of Senior Citizen housing at this site, replacing the 130-space parking lot that currently exists on the site. Development of this site for housing would continue the intensification of housing use in the vicinity, including Bayside Village on Site E directly across Bryant Street from the site, Delancey Street housing on Site J, the South Beach Marina Apartments on Site I-2, and the Bayshore Towers project, outside of the Redevelopment Area but close to the site on Harrison Street between Main Street and Beale Street. Incompatibility of housing use on this site with the adjacent Bay Bridge abutment due to noise is discussed in Section IV.G, Noise Impacts.

The proposed Plan Amendment would increase the amount of housing use on Site I. The portion of Site I-1 that currently contains the tilt-up warehouse would have its land use designation changed from commercial to residential under the proposed Plan Amendment, the tilt-up warehouse would be removed, and 422 units of housing would be constructed on this portion of Site I-1 and I-3. Increased housing use on this site would be compatible with the existing South Beach Marina Apartments on the same block; the newly constructed housing projects on Sites E and J; and with the proposed housing project on site K.

Under the proposed Amended Plan, the Oriental Warehouse would be reused as a 500-space parking garage and approximately 12,500 gsf of commercial space. Reuse of the Oriental Warehouse in this manner would be compatible with surrounding residential uses; other impacts related to the reuse of this historical building are discussed in Section IV.I, Historic, Architectural, and Cultural Resources.

Development of Pier 40 within site N for commercial, marine support and open space uses would continue the transformation of the waterfront from marine-related to non-marine-related uses. The proposed change in land use designation including commercial space and a public piazza, would provide more public access to waterfront than currently exists.

The proposed Plan Amendment would allow alternate land uses, as designated in the land use plan, to be combined on the same parcel. This provision would affect Sites F and H, on which commercial or residential uses are allowed, and Site G, on which residential or light industrial uses are allowed.

The combination of commercial and residential uses on Sites F and H would not result in any adverse land use impacts. The combination of residential and light industrial uses on Site G, however, could be incompatible depending on the nature of the industry and any noise, odors or hazards. At the time when a specific project involving the combination of uses is proposed for Site G, the Redevelopment Agency would review the project to identify any incompatible aspects of the industrial use.

The proposed Plan Amendment would also permit the Agency, on a short-term basis, to lease any of its property that has not been redeveloped for uses which are not in conformance with the adopted Redevelopment Plan, including temporary public storage buildings, storage within existing buildings, and use of existing parking or vacant lots for construction staging and parking areas. Sites affected by this proposed provision would include Sites C, D, F, G, H, L, M, N and a portion of I. This provision would be in effect only for the short term (until buildout in 2000), and would not result in any adverse land use impacts.

HEIGHT AND BULK

Development allowed under the proposed Amendment to the 1980 Redevelopment Plan would adhere to the existing height and bulk standards contained within the Design for Development document, with the exception of Sites I-1 and I-3, which would have an increased height limit from 105 feet to 160 feet. A portion of Site I currently contains a residential structure rising to approximately 13 stories. Increasing the height limit to 160 feet would allow another structure on Site I to be about 30 feet taller than any other structure on the site.

Increasing the height limit on Sites I-1 and I-3 would allow a building to be constructed that would be taller than any of the surrounding buildings including the Oriental Warehouse located on Site

I. Since many of the buildings to the west of Site I, outside of the Redevelopment Area, are ten stories or less, increasing the height limit on Site I could block some existing views of the Bay.

Under the Amended Plan, the office use proposed for Site C-1 would rise to a height of 200 feet, compared to 240 feet as allowed on the site under the Redevelopment Plan height limitations (see Figure 5, page 35).

THE MASTER PLAN

The relationship of the proposed Redevelopment Plan Amendment to applicable objectives and policies in the City's Master Plan is outlined in Table 4, below.

SAN FRANCISCO BAY PLAN/WATERFRONT SPECIAL AREA PLAN

The relationship of the proposed Redevelopment Plan Amendment to applicable policies and recommendations in the San Francisco Waterfront Special Area Plan is outlined in Table 4 below. The Plan permits the following uses on new or replacement fill: commercial recreation; public recreation/open space/public access; marina. Commercial recreation is defined as "facilities specifically designed to attract large numbers of people to enjoy the Bay and its shoreline, such as restaurants, specialty shops, and hotels."[1]

The proposed use of Pier 40 under the proposed Plan Amendment would not require any new or replacement fill nor would it change the Pier's existing scale. The commercial space use would be within the existing shed on Pier 40, which would be renovated.

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1. San Francisco Waterfront Special Area Plan, BCDC, April 1975, p. 8.

TABLE 4

RELATIONSHIP BETWEEN APPLICABLE OBJECTIVES OF THE MASTER PLAN, THE SAN FRANCISCO WATERFRONT SPECIAL AREA PLAN AND THE PROPOSED PLAN AMENDMENT

COMMERCE AND INDUSTRY ELEMENT	RELATIONSHIP OF PROJECT TO OBJECTIVES
Objective 3, Policy 1: "Promote the attraction, retention and expansion of commercial and industrial firms which provide employment improvement opportunities for unskilled and semi-skilled workers."	New uses on the four development sites, including the office building on Site C-1 and the commercial space on Pier 40, could provide employment opportunities for unskilled and semi-skilled workers. Some existing firms employing unskilled or semi-skilled workers would be displaced; however, these firms would be relocated, as provided for in the Redevelopment Plan.
Objective 4, Policy 3: "Avoid public actions that displace existing viable industrial firms."	Redevelopment of the area under the Plan would result in the increased intensification of the area for housing and office use, resulting in the relocation of viable industrial firms; however, the proposed Plan Amendment would not intensify this impact.
Objective 4, Policy 5: "Avoid encroachment of incompatible land uses on viable industrial activity."	The proposed Plan Amendment would not result in the encroachment of incompatible land uses on viable industrial activity.
Objective 5, Policy 4: "Avoid actions which may serve to displace desired existing maritime uses."	The existing maritime use within the Pier 40 shed is in the process of relocating to Pier 36, and has received relocation assistance as provided for in the Redevelopment Plan.
Objective 5, Policy 8: "Encourage maritime activity which complements visitor activity and resident recreation."	The proposed commercial space and public piazza adjacent to the existing small boat harbor on Pier 40 would complement visitor activity and residential recreation.
Objective 5, Policy 11: "Pursue permitted non-maritime development on Port properties."	The existing Redevelopment Plan would result in permitted non-maritime development on Port properties. The proposed Plan Amendment would result in additional non-maritime development.

TABLE 4 (Continued)

COMMERCE AND INDUSTRY ELEMENT	RELATIONSHIP OF PROJECT TO OBJECTIVES
Objective 10, Policy 1: "Guide the location of additional tourist-related activities to minimize their adverse impacts on existing residential, commercial and industrial activities."	The commercial space on Pier 40, as proposed under the Plan Amendment, would not result in the displacement of the existing industrial use, as the industrial use is in the process of relocating to Pier 36. It would not cause adverse impacts on existing residential or commercial activities.
NORTHEASTERN WATERFRONT PLAN, LAND USE	
Objective 1, Policy 2: "Consistent with other policies of this Plan, encourage uses on Port property which return revenue to the Port to support and improve its facilities."	The proposed Plan Amendment would result in development that would return revenue to the Port.
Objective 2, Policy 1: "Limit additional uses which generate a concentration of activity during the same peak periods, in areas which are heavily impacted with such uses."	Full buildout under the proposed Plan Amendment would not result in additional uses that would generate a concentration of activity during the same peak periods.
Objective 2, Policy 2: "Diversify activities to encourage the use of the Northeastern Waterfront by a broad spectrum of the population."	The proposed Plan Amendment would result in additional office, housing, commercial and open space uses within the Redevelopment Area, which would attract a broad spectrum of the population.
Objective 2, Policy 3: "Encourage land uses having different peak periods of activity within each sub-area of the Northeastern Waterfront to contribute to the area's diversity, to expand the period of use, to decrease peak period traffic congestion, to facilitate efficient use of the transit system and to preserve and enhance the environmental quality of the waterfront."	The proposed Plan Amendment, like the existing Plan, would result in the development of a variety of land uses in the Redevelopment Area having different peak travel periods.
Objective 2, Policy 4: "Give priority to the development of public open space in any non-maritime development adjacent to, or over, the water."	Development on Pier 40 within Site N would result in the renovation of the existing shed for commercial and maritime uses, and in the creation of a public piazza over the water on Pier 40.

TABLE 4 (Continued)

NORTHEASTERN WATERFRONT PLAN, LAND USE	RELATIONSHIP OF PROJECT TO OBJECTIVES
Objective 2, Policy 5: "Emphasize water-related recreation, Bay-oriented commercial, recreation and Bay-oriented public assembly uses in non-maritime development adjacent to, or over, the water."	See Objective 2, Policy 4, above.
NORTHEASTERN WATERFRONT PLAN, MARITIME AND INDUSTRIAL	
Objective 1, Policy 1: "Give priority to maritime activities recognizing that the waterfront available for such activities is a limited resource and that maritime activities are vital to the City's economy. Based on a realistic assessment of the maritime needs of the Port, reserve the necessary waterfront area by prohibiting activities which would preclude possible future maritime development."	Under the proposed Plan Amendment, a portion of Pier 40 would be used for maritime-related activities, including a ship chandlery and a harbor master's office. Development of commercial space on a portion of Pier 40, as proposed, would preclude possible additional maritime development.
NORTHEASTERN WATERFRONT PLAN, RESIDENTIAL	
Policy 2: "Encourage the development of additional housing wherever feasible (except on new or replacement fill), consistent with maximum maritime development."	The proposed Plan Amendment would result in the provision of additional housing on sites D and I. No housing is proposed on new or replacement fill.
NORTHEASTERN WATERFRONT PLAN, URBAN DESIGN	
Policy 5: "Permit non-maritime development bayward of the seawall only if the following qualifications are met: (a) Maximum feasible public access is provided to the water's edge; (b) Important Bay views along the Embarcadero and level inland streets are preserved and improved."	The Amended Plan proposes development bayward of the seawall only on the Pier 40 portion of Site N, which would include the creation of a public piazza, providing public access to the water's edge, and renovation of the existing shed for commercial and maritime-related uses. As the size of the existing shed would not be enlarged, views of the Bay from The Embarcadero and level in-land streets would not be changed. Proposed development on Pier 40, including the public piazza and the renovation of the existing shed, could improve views of the Pier from inland streets.

TABLE 4 (Continued)

NORTHEASTERN WATERFRONT PLAN, URBAN DESIGN	RELATIONSHIP OF PROJECT TO OBJECTIVES
Policy 6: "Retain older buildings of architectural merit or historical significance to preserve the architectural and historical character of the waterfront and ensure the compatibility of new development."	The proposed Plan Amendment does not change the intent to retain the special architectural features of the Oriental Warehouse. See Section IV.I regarding impacts to the Oriental Warehouse. The Pier 42 Bulkhead Building, which is eligible for listing in the National Register of Historic Places, would also be preserved.
Policy 13: "Remove exposed surface parking from over water, from under The Embarcadero Freeway, and along The Embarcadero roadway to improve shoreline appearance and access to the Bay."	The proposed Plan Amendment calls for exposed surface parking to be removed from Site C-1, below The Embarcadero Freeway, as well as from Sites D and I; however, existing parking would continue to be provided on Pier 40 in part of the pier shed.
Policy 19: "On non-maritime piers with sheds, provide continuous peripheral pedestrian public access ways of at least 15 feet in width for walking, viewing and fishing. Provide benches and street furniture. Prohibit use of access areas for valet parking, auto drop off, service vehicles or trash storage, but allow emergency vehicle access."	Although a specific site plan for Pier 40 has not yet been designed, existing peripheral accessway around the existing shed would be retained and enlarged for public walking, viewing and fishing. Service vehicle, valet parking and auto drop-off uses would occur to the west of the Bulkhead Building.
Policy 28: "Prohibit the use of reflective glass. Use flat glass skylights and discourage the use of dark tinted glass in highly visible areas."	No reflective or dark tinted glass would be used within the Redevelopment Area.
NORTHEASTERN WATERFRONT PLAN, RECREATION AND OPEN SPACE	
Policy 5: "Provide overlooks and public viewing areas with convenient pedestrian access wherever possible. Every attempt should be made to provide such viewing facilities in areas of maritime and fish processing activities without interfering with the operation of those activities. Remove bulkhead buildings between piers wherever feasible in order to construct such overlooks and to open views."	Development on Pier 40 and the proposed Plan Amendment would provide overlooks and public viewing areas.

TABLE 4 (Continued)

NORTHEASTERN WATERFRONT PLAN, FERRY BUILDING AREA	RELATIONSHIP OF PROJECT TO OBJECTIVES
Block 3741, Policy 1 (Development Site C-1): "Develop a 400- to 800-room hotel complex. 98 Folsom may be removed if necessary to accommodate the hotel. Retain the existing height limits. In the alternative, develop housing with a density range of 150 to 300 units per acre."	Under the proposed Plan Amendment, the land use designation for Site C-1 would permit office use as well as residential use; office use would not be consistent with this policy.
NORTHEASTERN WATERFRONT PLAN, NORTH CHINA BASIN AREA	
Blocks 3766-3771, Policy 4 (Development Site D): "Limit the height of any structure built on the northwest corner of Bryant and Beale Streets (Block 3766, Lot 7) to 24 feet. Ensure that such structures have a low profile and subdued design and color so as not to detract from the dramatic appearance of the adjacent Bay Bridge abutment. Screen the building with generous landscaping, including tall trees behind the building and along the bridge abutment to relate to the trees to the west of the site. Provide vehicular access to the site only from Beale Street.	Housing is proposed for Site D under the proposed Plan Amendment. The height limit at this site is 24 feet, in accordance with this policy. A specific design has not yet been developed for this site; however, it would follow the recommendations of this policy regarding profile, color, landscaping, and access so as not to detract from the dramatic appearance of the adjacent Bay Bridge abutment.
Piers 40-46A, Policy 3: "On Pier 40, provide a full range of services including boat building and repair facilities, dry dock storage, sail maker, boat sales and rental, ship chandlery and other uses related to the marina."	Under the proposed Plan Amendment, Pier 40 would contain harbor-related uses, including a ship chandlery and a harbor master's office, as well as commercial space and a public piazza. Dry dock and boat repair facilities would not be provided with the proposed use.
Piers 40-46A, Policy 4: "Design any new or rehabilitated buildings on Pier 40 to reflect the bold simple lines of traditional pier sheds. Provide continuous peripheral public access along the water sides of the pier including sitting and fishing areas, except for portions of the pier which may remain in ship repair use and related activities, where such public access might conflict. Locate a prominent seating area at the eastern end of the pier. Ensure that pier railings and other design elements be compatible with the promenade and breakwater design. Do not obstruct navigational requirements of major ships between Piers 38 and 40."	As proposed under the Plan Amendment, the existing shed on Pier 40 would be retained and renovated for a mixed-use facility including commercial and marine-related use. The renovated building would retain the bold simple lines of traditional pier sheds. Existing peripheral public access would remain, and a new public piazza would be created. Continuous peripheral public access is not included in the Plan. Pier railings and other design elements would be compatible with those on the remainder of Site N. No construction or additional fill would take place that would obstruct the navigational requirements of ships between Piers 38 and 40.

TABLE 4 (Continued)

NORTHEASTERN WATERFRONT PLAN, NORTH CHINA BASIN AREA	RELATIONSHIP OF PROJECT TO OBJECTIVES
Historic Preservation, Policy 2: "Historically restore the Oriental Warehouse as the focal point of the residential community; include a combination of such uses as day care, recreation, and neighborhood services, professional offices and shopping. Remove the building to the north along the line of Brannan Street to enhance the form and visibility of the warehouse. Maintain the exterior facade and remove those windows that have been added without regard to the general exterior. Preserve portions of the existing paving as a public plaza and setting for the warehouse and remove unused spur tracks."	See Section IV.I, Historic and Cultural Resources, regarding reuse of the Oriental Warehouse. Under the proposed Plan Amendment, the Oriental Warehouse would be retained and reused as a parking garage and commercial space. The tilt-up warehouse to the north would be removed, but would be replaced with housing, which would not enhance the form and visibility of the warehouse. The exterior facade of the Oriental Warehouse would be retained; however, there are no plans at this time to remove windows that have been added, or to provide a public plaza. Unused spur tracks would be removed.
Walkways and Open Space, Policy 2: "Develop a major plaza next to the Oriental Warehouse which is centrally located, and connect it to smaller open spaces within the proposed neighborhood. Have walkways open onto small plazas to create intimacy and spatial definition and orient them to be protected from winds. Enhance the feeling of outdoor security through use of lighting, walkways design, ingress and egress points and good surveillance by building orientation."	A major plaza is not proposed for development next to the Oriental Warehouse under the proposed Plan Amendment. Instead, housing is proposed to replace the existing tilt-up warehouse and parking lot adjacent to the Oriental Warehouse. Small open plazas within the proposed housing developments would follow the design considerations outlined in Policy 2, when such spaces are designed.
URBAN DESIGN ELEMENT	
Objective 1, Policy 1: "Recognize and protect major views in the City with particular attention to those of open space and water."	No major views of open space or water would be affected as a result of the proposed Plan Amendment.
Objective 1, Policy 4: "Protect and promote large-scale landscaping and open space that define districts and topography."	The proposed Plan Amendment would not affect the major open spaces proposed for Sites C-2 and M in the 1980 Redevelopment Plan; the Plan Amendment provides for an additional public piazza on Pier 40. The plaza next to the Oriental Warehouse would not be included.

TABLE 4 (Continued)

URBAN DESIGN ELEMENT	RELATIONSHIP OF PROJECT TO OBJECTIVES
Objective 2, Policy 3: "Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the City's residents."	The proposed Plan Amendment would not result in any new fill in or encroachment on the San Francisco Bay. Development proposed for Pier 40 would take place entirely upon existing fill, and the proposed commercial space would be within the existing pier shed.
Objective 3, Policy 5: "Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development. The height of buildings should taper down to the shoreline of the Bay."	Heights of buildings within the Redevelopment Area would be regulated by the Redevelopment Plan, which calls for buildings to taper down to 40 feet at the shoreline. The increase in height limit on Site I, about a half-block from the water, from 105 to 160 feet, would not result in the height of buildings tapering down toward the Bay. New uses on Pier 40 as proposed under the Plan Amendment would take place for the most part within the existing pier shed, which would be renovated.
Objective 3, Policy 6: "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction."	Under the proposed Plan Amendment, buildings proposed on Sites C-1 and D would be in scale with surrounding buildings. The proposed Amendment would increase the existing height limit on sites I-1 and I-3 from 105 feet to 160 feet; buildings of this height could have an overwhelming or dominating appearance when compared to existing older buildings in the area, including the Oriental and South End Warehouses, but would be compatible with the heights of some of the existing new buildings.

TABLE 4 (Continued)

SAN FRANCISCO WATERFRONT SPECIAL AREA PLAN	RELATIONSHIP OF PROJECT TO OBJECTIVES
GENERAL POLICIES	
Policy 6, Required Public Access: a. "In accordance with general Bay Plan policies, maximum feasible public access should be provided in conjunction with any development of existing or replacement fill. . . Particular attention should be given to the provision of perimeter public access along the platform edge." b. "Development of public access should be required as a condition of permits for new maritime and non-maritime development."	Development on the existing Pier 40 would include a public piazza and would retain the existing peripheral public access.
GENERAL RECOMMENDATIONS	
RECOMMENDATION 3: "Public open space should be provided on existing piers when there is a substantial change in use from maritime to non-maritime."	New development on Pier 40 would include a public piazza.
SEAWALL LOTS 329-336 AND ADJACENT INLAND AREAS	
RECOMMENDATION 1: "The triangle bounded by Second Street, Bryant and the Embarcadero, including Seawall Lots 329 through 336, should be redeveloped as a mixed-use neighborhood, including predominantly residential uses. Preservation of viable economic uses and attractive older buildings should be encouraged."	The area indicated, basically the South Beach subarea, would be redeveloped as a mixed-use neighborhood, regardless of whether the Plan is amended as proposed. Under both the existing and amended Plan, the South Beach subarea would contain predominantly residential uses, and would preserve viable economic uses and attractive older buildings, including the Pier 42 Bulkhead building.

TABLE 4 (Continued)

GENERAL RECOMMENDATIONS	RELATIONSHIP OF PROJECT TO OBJECTIVES
PIERS 34, 36, 38, 40, 42, AND 44	
Policy 1: "Bay-oriented commercial recreation on replacement fill in the areas occupied by Piers 34 through 44 should be limited in scale and consistent with the recommended development of Seawall Lots 329 through 336 of existing Piers 26 through 32 and 46a and 46b (when these are no longer in maritime use), and of the triangle bounded by Second Street, Bryant Street and The Embarcadero."	Proposed development on Pier 40 would not include any replacement fill; the proposed commercial use would be within the existing pier shed. The existing maritime use on Pier 40 is currently being relocated to Pier 38. The proposed uses of Pier 40 as commercial space, public piazza, and marine-related, would be consistent with the recommended development of the South Beach subarea.
Policy 2: "No hotel/boatel use should be permitted on replacement fill in the area of Piers 34 through 44."	Pier 40 would contain commercial space; however, it would be constructed within the existing pier shed, on existing fill, and would require no replacement fill.

B. POPULATION, HOUSING AND EMPLOYMENT

Since certification of the Rincon Point-South Beach Redevelopment Plan Final EIR on November 5, 1980, new information has become available regarding the cumulative impacts of downtown growth. This new information has been published in the Downtown Plan EIR, the South of Market Plan EIR, and the Mission Bay EIR. The new cumulative population, housing and employment impacts information is incorporated by reference and summarized below, pursuant to CEQA Sections 21061 and 21100.

New project-specific information is included in this supplement, as a result of the area's being partially redeveloped since certification of the 1980 Final EIR, and as a result of the proposed change in land use designation of four parcels. Thus, the Business Relocation Impacts section, on pages 45 and 46, and the Social and Employment Characteristics section, on pages 47 and 48, of the 1980 Final EIR, are supplemented with the following:

CITY AND REGIONAL POPULATION AND EMPLOYMENT

Housing Demand and Population Growth

The Mission Bay and South of Market Plan EIRs discuss residence patterns in a City-wide and regional context, in relation to housing demand from growth of employment in the Greater Downtown and Mission Bay. San Francisco employment growth will contribute to housing demand throughout the region, as not all San Francisco workers will live in the City. If housing is built in the Mission Bay and South of Market areas, more City workers could live in the City; San Francisco would contribute less to the regional housing market.

Regardless of the type of development in Mission Bay and in South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time because more housing will be added in the City relative to job growth, compared to the situation in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers will require about the same share of the region's housing in the future as they did in the early 1980s. San Francisco's effects on the regional housing market will vary in the future. City workers could become more important to the

housing market in some close-in communities in western parts of the East Bay and east of the hills along BART corridors, in northern San Mateo County and parts of Marin.

About half of the people working in Greater Downtown San Francisco would live in the City in 2000 and 2020. The rest would live in communities throughout the rest of the region: about 30% in the East Bay; 13% in the Peninsula and in the South Bay and about 8% in the North Bay. Greater Downtown workers living in the City would represent about 57% of the City's employed residents. People working downtown would represent a considerably smaller proportion (about 4-9%) of the employed residents of other Bay Area communities. (See Mission Bay EIR, Vol. II, pp. VI.C.56-61 and 92-97; South of Market EIR, pp. 66-67.)

Employment Growth

Employment patterns in the City and the region in the future, particularly in the Greater Downtown, depend somewhat on the development plan chosen and built in the Mission Bay area. The amount of employment growth forecast in the Bay Region would not change if Mission Bay is built, but the location of jobs would be different. South of Market area employment growth is forecast to be relatively small compared to the rest of downtown and would have little influence on growth patterns. This information, from the Mission Bay and South of Market Plan EIRs, is summarized below.

Mission Bay Alternative A, with a combination of residential and commercial uses, would provide about 25,000 job opportunities. Citywide employment, including South of Market and the rest of the City, would grow by about 210,000 jobs between 1985 and 2020 under this scenario. Mission Bay Alternative B includes predominantly residential and open space uses and would provide about 6,000 jobs; citywide employment would grow by about 200,000 jobs and more of this growth would occur in the downtown and in the rest of the City between 1985 and 2020. Mission Bay Alternative N, with predominantly commercial and industrial development and no new housing, would provide about 17,000 job opportunities, contributing to citywide employment growth of about 207,000 jobs during the same time frame.

The South of Market area would contribute about 30,000 jobs to total jobs in the greater Downtown area in the year 2000, of which about 7,000 would be job growth since 1985.[1] The C-3

District would contribute about 331,000 jobs to the total 444,000 jobs in the Downtown and Vicinity in the year 2000. Total Downtown jobs in the year 2020 would range from about 489,000 to about 504,000 depending on the Mission Bay scenario that was built out at that time.

Forecasts of employment in the year 2000 in the Downtown & Vicinity and in the City as a whole have been revised since the Downtown Plan EIR was prepared. The Mission Bay and South of Market Plan EIRs provide these updated forecasts. In summary, the C-3 District employment growth would be about 69,000 jobs between 1985 and 2000, compared to a forecast of about 91,000 new jobs between 1984 and 2000 shown in the Downtown Plan EIR; however, it is more appropriate to compare forecasts of change from 1981 to 2000, as 1981 base data are the same for both the Downtown Plan EIR and the two more recent EIRs. For that period, the Downtown Plan EIR shows growth of about 106,000 jobs in the C-3 District, while the new forecasts show growth of about 64,000 jobs.[2] (See Mission Bay EIR, Vol. II, pp. VI.B.53-79, and Vol. III, p. XIV.B.24-26; South of Market EIR, Appendix B, pp. B.10-14; and Downtown Plan EIR, pp. IV.C.29-61.)

Employment Densities

Employment densities -- the average number of square feet per person in a building --were recalculated based on the revised space and employment forecasts for the larger area in the Downtown & Vicinity prepared for the Mission Bay EIR. The relative reduction in growth compared to the Downtown Plan EIR forecasts results in a reduction in density, or an increase in the average square feet per person in office uses from 268 square feet to about 294 square feet in the year 2000. (See especially Mission Bay EIR Vol. II, pp. VI.B.53-56 and VI.B.60-62.)

Use of this density for analysis of individual office projects would reduce the number of persons in that building compared to that shown by use of the Downtown Plan density factor, reducing proportionally that building's contribution to those cumulative impacts caused by employment growth in downtown. The Redevelopment Project Area employment was not recalculated because use of the smaller square footage (higher density) therefore provides a more conservative estimate of the project's impacts.

REDEVELOPMENT AREA

Housing

Full development allowed under the proposed Redevelopment Plan Amendment would result in the addition of between 1,170 and 1,290 housing units, depending on the amount of housing built on development sites with alternate land uses designated, for a total of 2,890 to 3,010 housing units within the entire Redevelopment Area. No existing units would be removed as a result of the proposed Plan Amendment. The existing goal of the Redevelopment Plan is for a minimum of 40% of the new units built on Agency-owned parcels to be affordable. On privately owned land, the goal would be a minimum 20% affordability.

Assuming the average household size in the Downtown & Vicinity of 1.6 persons per household, development allowed under the proposed Plan Amendment would result in the addition of about 1,870 to 2,065 net new residents within the Redevelopment Area.

Employment

Full development of all sites in the Redevelopment Area as allowed under the proposed Redevelopment Plan Amendment would result in the net addition of up to 2,053 jobs, an increase from existing employment within the Redevelopment Area of up to 129%. Table 5 below shows existing and proposed employment by type. The mix of business activities within the Redevelopment Area would shift, as existing industrial sites would be redeveloped for office, retail, or housing use. As a result of development allowed under the proposed Redevelopment Plan Amendment, approximately 110 light industrial jobs would leave the Redevelopment Area. It is assumed some of the light industrial firms currently employing people within the Redevelopment Area would relocate within the City or the Bay Area; however, some could choose to go out of business.

There are also about 210 office employees and about 240 retail employees working for firms currently located on sites that would be redeveloped under the proposed Redevelopment Plan Amendment. These existing firms would relocate within the City or the Bay Area; it is possible that they would relocate within new space in the Redevelopment Area. About ten marine-support

TABLE 5

ESTIMATED EXISTING AND PROPOSED EMPLOYMENT
WITHIN REDEVELOPMENT AREA

Employment Type	Existing[1]	Loss Due To[2] Redevelopment	Increase Due To[3] Redevelopment	Total After Redevelopment	Net Change
Office	1,070	210	1,820	2,680	+1,610
Retail/Service[4] Restaurant	410	240	793[5]	963	+553
Light Industry	110	110	0	0	-110
TOTALS	1,590	560	2,613	3,643	2,053

[1] Based on telephone survey of existing tenants, EIP Associates, 1/30/90 to 2/6/90.
[2] Represents existing jobs that would be relocated due to redevelopment of existing sites.
[3] Based on the following employment density factors from Downtown Plan EIR:
Office Space: 268 gsf/employee
Retail Space: 350 gsf/employee
[4] Includes marine-support space.
[5] Number shown is maximum; actual number could range from 340 to 600 employees, depending on allowed alternate land uses developed on Sites F and H.

employees currently work on Pier 40; it is assumed that their firms would be relocated to the new marine-support space proposed for the renovated Pier 40 shed.

The Redevelopment Plan states that eligible business concerns displaced by redevelopment would receive relocation assistance and benefits in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970, as amended, as well as other federal, State, and local regulations.

Given the development potential under the proposed Redevelopment Plan Amendment, there would be a net increase of 1,170 to 1,290 housing units (1,410 to 1,600 residents) and a net increase of about 1,750 to 2,053 jobs in the Redevelopment Area, after subtracting losses due to redevelopment.

Relationship Between Housing and Employment

Redevelopment Area housing would accommodate approximately 45% to 50% of the additional workforce created under the amended plan. This housing would become integrated into, and subject to the dynamics of, a larger citywide and regional housing market. Those dynamics are recognized and discussed in detail in the Downtown Plan and Mission Bay EIRs, which are incorporated by reference.

The Bay Area offers many amenities which make it a desirable place in which to live. In general, the demand for housing in the Bay Area region and San Francisco in particular has been strong, and supply has not kept up with demand in many areas. One result is an increase in the prices and rental rates of housing, which play a determining role in selecting a place of residence. Many factors play a role in this current housing situation, including the attractiveness of diversity in life styles, changes in household income, employment growth and changes in demographic and household characteristics. Many circumstances other than employment growth play a role in affecting the demand and availability of housing. However, with continued employment growth, there will be additional demand for San Francisco housing, which will be added to an otherwise competitive market with relatively high prices and rents.

The Downtown Plan EIR forecasts an increase in the percentage of C-3 district employees that would reside in San Francisco, many of whom are likely to have preferences and resources for the types of dwelling units expected within the Redevelopment Area and other new residential areas in close proximity to the C-3 district. This is also likely to be the case for employment growth in other areas of the greater downtown. The potential future residents of dwelling units within the Redevelopment Area, however, cannot be addressed simply in terms of forecasted growth in greater downtown employment. Not all workers employed in downtown San Francisco will be able to afford new housing within the Redevelopment Area, as about 60% would be market rate and 40% would be affordable. As new housing is built, those who can afford it will move in and others will take the housing they vacate, thereby vacating their housing for other people, and so on. The dynamics which occur as people move in and out of the City (and the region) for a variety of reasons is an acknowledged and normal circumstance of the housing market. This "re-shuffling" pattern explains why households can be added and absorbed within the Redevelopment Area even though the Redevelopment Plan would not produce 100% affordable housing.

Housing which could be constructed within the Redevelopment Area is included in a listing of housing opportunity sites in the 1983 Residence Element of the San Francisco Master Plan, which was incorporated into the assumptions of future housing supply in the Downtown Plan EIR analysis. The Downtown Plan EIR assumed that the increasing acceptance of higher density, central city living would support more infill residential development than has occurred in the past. Proportionally more of the growth in housing in the future is expected to occur in the eastern portions of the City including the Redevelopment Area, due to opportunities for larger scale, mixed-use developments and the efforts of public agencies to rezone certain areas for residential development. Many such units are likely to be oriented toward singles, younger adults and generally smaller households. Potential new housing units in mixed-use developments in the Redevelopment Area are expected to have these characteristics.

The examination in the Downtown Plan EIR of the additional employment forecast in the C-3 district, in conjunction with the additional housing which is likely to be developed throughout the City concluded that there would be additional supply relative to additional demand in the future as compared to that in the past. The primary reason is that housing market factors together with local policies and redevelopment programs are expected to support a larger addition of housing in

the City than occurred in the past two decades. Nevertheless, San Francisco is unlikely to accommodate all of the households that would otherwise choose to live in the City. This would continue to be true after the units proposed for construction under the Redevelopment Plan were occupied.

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1. South of Market Plan EIR, p. 74.

2. See South of Market Plan EIR, Appendix B, Table B-1, page B-11. New forecasts show fewer jobs for the period 1981-2000 than for 1985-2000 due to adjustments to C-3 District employment estimates made by San Francisco Chamber of Commerce, Economic Development Department. Estimated C-3 District employment was 267,590 in 1981 and 261,980 in 1985.

C. TRANSPORTATION

The following sections summarize the transportation impacts for the project both in a cumulative context and at a project specific level. The first section summarizes cumulative transportation analysis undertaken in San Francisco. It provides an overall context within which the project falls. The section after that details specific project impacts of the proposed Rincon Point-South Beach Redevelopment Plan Amendment. The focus of the transportation impacts analysis is the proposed changes in land use for four sites previously approved in the Rincon Point-South Beach Redevelopment Plan Final EIR (ESA, November 24, 1980) and the impact of those changes of Year 2000 traffic and transit projections. This information supplements the Transportation Impacts section on page 73 of the 1980 Final EIR.

CUMULATIVE CONTEXT

Introduction

The transportation sections of the Mission Bay[1] and South of Market Area Plan[2] EIRs address various transportation impacts in 2000 and 2020. The Mission Bay transportation impact analyses evaluate travel generated by Mission Bay in the context of growth in travel projected for the rest of the City and Bay Area. The South of Market analyses do the same for that area. It is growth in the City and region that would result in the greatest impact on most of the transportation systems studied. The October 17, 1989, Loma Prieta earthquake caused many downtown traffic patterns to shift mainly due to the closure of the Embarcadero Freeway. Because these pattern shifts are temporary in nature, and it is expected that the freeway would be rebuilt or replaced above or below grade, traffic patterns with the freeway closed were not analyzed.

The two EIRs use slightly different analysis methodologies, but employ the same basic screenline approach to study regional transportation impacts of San Francisco employment growth. Results differ somewhat, based on the differences in methods. The differences are generally less than five to ten percent; this difference is well within the range of accuracy of forecasts to scenarios 15 years away. Therefore, the two sets of results are compatible. This summary of cumulative transportation effects will report largely from the Mission Bay EIR, with South of Market EIR results included where there is notable additional information.

In summary, both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity. Even with shifts to transit, the p.m. peak commute period would lengthen. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required; regional agencies such as the Association of Bay Area Governments (ABAG) also emphasize the need to provide more housing near job centers in order to reduce the regional commute.

The proposed sites within the Rincon Point/South Beach Redevelopment Project are expected to be developed, occupied and the space new to Downtown San Francisco absorbed by 2000. Therefore, the impacts of the project and its contribution to cumulative transportation impacts are analyzed largely in the 1985-2000 context. The information from the Mission Bay EIR for 2020 is presented for the reader's information and to provide a very long-term picture as it is presently reported.

Analysis Years

For cumulative analysis of transportation conditions, two benchmark years have been established. The year 2000 is used to reflect the timeframe in which the proposed project would be absorbed into the Downtown growth.[3] In order to account for buildout of the Mission Bay planning area, the year 2020 was established in the Mission Bay EIR as a reasonable projection year. Analyses for the 1985-2000 timeframe can rely on reasonably confident estimates of regional transportation capacity improvements as defined by the regional agencies' highway and transit planners. There are no regional transportation plans or policies for 2020. Therefore, the Mission Bay EIR used a different approach for this longer-term analyses. Rather than reporting the impacts of future travel on existing or planned transportation systems, as is done for 2000, the estimates of 2020 travel conditions are used to identify the types of transportation improvements likely to be necessary to serve growth in travel between 2000 and 2020.

For both forecast years, 2000 and 2020, the projections of travel assume that many commuters from the Downtown & Vicinity who would otherwise drive, would shift to increased use of transit and ridesharing in response to growing highway congestion and the availability of improved transit

service. The history of commuting to the Downtown & Vicinity shows that substantial shifts in travel from autos to other modes of travel have occurred when transit and ridesharing systems were improved.[4] In addition, in the future, highways and bridges leading to/from San Francisco are expected to be considerably more crowded, and transit capacity is expected to be increased between Downtown San Francisco and other Bay Area locations, making transit an attractive alternative to crowded freeways. The travel forecasting procedures, therefore, assume that shifts from auto to ridesharing and transit would continue into the future.[5]

Regional Travel

Regional travel was analyzed for each of the three major approaches to San Francisco:

- the North Bay via the Golden Gate Bridge;
- the East Bay via the San Francisco-Oakland Bay Bridge; and
- the Peninsula via the US 101 and I-280 freeways.

The analysis for 2000 is based on comparing the projected demand for transportation service with the capacities expected to be available. The analysis for 2020 uses the transportation system capacities developed for 2000 as a base and identifies additional capacity above the 2000 level that would be needed to serve the travel demands of 2020.

The regional travel forecasts were taken from the Metropolitan Transportation Commission (MTC) nine-county Bay Area travel model and assume that where severe congestion is projected for the highway system and where parallel transit and ridesharing systems are available, travelers would choose to shift from their autos to fill the capacity available in transit and ridesharing systems. Those shifts are assumed to be made by travelers from the Downtown & Vicinity only, because they would have more transit and ridesharing options than travelers from other parts of the City or region. The shift to transit and ridesharing would be greatest for travel to the East Bay, somewhat less to the North Bay, and none would be necessary for travelers to the Peninsula by 2000.

Growth in the entire Downtown & Vicinity and the rest of the region, rather than growth in South of Market or Mission Bay alone, would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and to uses the US 101 and I-280 freeways at peak hours.[6]

Each of the major approaches or corridors to Downtown are discussed in the following sections.

MUNI Access

To analyze cumulative impacts on MUNI, individual MUNI routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to as "screenlines." By 2000, ridership would generally be accommodated on the MUNI screenlines. Overcrowding would occur on the Northwest screenline during the P.M. peak hour, and on the Northeast screenline during the P.M. peak period. However, by 2020, all but the Southwest screenline would be operating beyond MUNI's load standard. Additional service required could include new light-rail service, articulated coaches and trolleys, reduced headways and expanded preferential treatments, to the Geary Boulevard corridor to the Northwest and to the Bayshore corridor in the Southeast area of the City.[7]

North Bay Corridor

The Golden Gate Bridge and its approaches operated with moderate congestion (driving speeds of about 35 to 45 mph) in peak hours in 1985. If no shift from 1985 transit use levels were to occur, the period of heavy congestion on the Bridge would last for about four hours in 2000. If additional transit capacity between Downtown and the North Bay were provided, and a substantial shift from autos to transit and ridesharing were made by travelers from the Downtown & Vicinity, the year 2000 congestion on the Bridge (a driving speed of about 30 mph) would be reduced to about two hours during the P.M. peak.

Golden Gate Transit indicates that it would be able to increase its bus and ferry capacity between Downtown and the North Bay by 2000 in response to the demand generated. Golden Gate Bus ridership would about double, while ferry ridership would grow by about 60% from 1985 to 2000. Ridesharing is projected to increase by 7% to 15% between 1985 and 2000 in the North Bay. Expected increases in transit capacity would be expected to meet increases in demand.

By the year 2020, heavy congestion on the Golden Gate Bridge could last four hours, assuming the levels of transit and ridesharing used in 2000, if there were no additional transportation improvements between 2000 and 2020. By that time, the need to consider major new transportation infrastructure and transit systems will have become apparent.

The next phase of regional transportation planning could consider adding a second deck to the Golden Gate Bridge to provide transbay capacity for new bus and carpool lanes, or a light-rail line, either of which would extend between Downtown San Francisco and Sonoma County.[8]

East Bay Corridor

There is virtually no room for additional vehicle traffic on the eastbound Bay Bridge approaches between 4:00 P.M. and 6:00 P.M. While the growth in travel demand on the Bay Bridge from the Downtown & Vicinity could be served by shifting those commuters from autos to transit and increasing ridesharing, trips to or from other areas of the region are not well served by transit and would continue to be made primarily in private vehicles.

Even with the substantial shift to transit and ridesharing assumed in the analysis, the Bay Bridge would operate at capacity for about 4.5 hours in 2000, resulting in severe congestion on the San Francisco approaches to the bridge, travel speeds of less than 30 miles per hour, and heavy congestion on the bridge itself every weekday afternoon. Were the shift to transit and ridesharing from 1985 levels not to occur, the period of severe congestion in 2000 would extend for over 5.5 hours.

By 2000 the numbers and proportion of commuters from the Downtown & Vicinity on BART during the P.M. peak period would be substantially higher. The number of trips on AC Transit would increase by about 65% based on the service available and the need to accommodate some BART riders by 2000.

The P.M. peak-period ratio of passengers to seats on BART would increase from 1.30 in 1985 to 1.63 in 2000. AC Transit loads would increase from 0.85 passengers per seat in 1985 to 1.30 in 2000. The capacity of BART is based on the maximum capacity of BART's computer system to

track trains in the transbay tube. The crowding projected for BART could not be fully mitigated during the peak period because of the system's technical operating limits.

An increase of seven percent in ridesharing from the Downtown & Vicinity across the Bay Bridge is projected for 2000. Even with substantial shifts to transit and ridesharing by commuters from the Downtown & Vicinity, by 2020 severe congestion on the Bay Bridge and its approaches would last for over five hours. The number of regional vehicle trips which could not be served by the Bay Bridge would grow from about 3,000 peak-period vehicles in 2000 to between 5,500 and 5,800 in 2020.

Mitigating those levels of congestion would require consideration of major changes to the regional transbay transportation system connecting the West Bay and East Bay. Virtually all of the concepts would require the City to work with MTC, Caltrans and local government agencies to undertake the regional planning needed to expand transbay transportation capacity.[9]

Peninsula Corridor

Between 1985 and 2000, traffic would increase on US 101 and I-280, the freeways serving the Peninsula. However, there would be less congestion on those routes at the San Mateo County Line than on the Golden Gate and Bay Bridges. Both US 101 and I-280 were only moderately congested at the San Mateo County line in 1985. In or near San Francisco, the capacity of local streets, US 101 and I-280 would be sufficient to handle future travel demand; the switch from highway to transit modes by Downtown & Vicinity commuters assumed for the Golden Gate and Bay Bridges would not be required for the routes serving the Peninsula. The transit analysis for 2000 and 2020 in this regional corridor, therefore, uses the same rates of transit use as found in 1985.

U.S. 101 at the San Mateo County line would operate at capacity for about 2.5 hours in 2000, with heavy congestion and speeds of 30 miles per hour occurring during that afternoon peak.

By 2020, heavy congestion on U.S. 101 would last for over four afternoon hours. I-280 would operate with only moderate congestion at the County line in 2000 and 2020 with speeds averaging 35 to 45 miles per hour throughout the peak period. The congestion projected in 2020 would be

reduced if commuters from the Downtown & Vicinity chose to increase their use of transit or ridesharing above the 1985 levels.

The use of transit to the Peninsula would increase. The level of service on transit would remain high, as there would be no system where ridership would be greater than available seats. Relocation of the CalTrain Station to Seventh and Townsend Streets under some Mission Bay development scenarios would reduce potential use of that transit service; use of BART and SamTrans would grow by about 40%, while CalTrain ridership would grow by just four percent. Three of the project sites would be located near one of the alternative alignments proposed for the CalTrain line to San Francisco's Downtown, now under study. In 2020, CalTrain, BART, and SamTrans would carry even larger loads, but would continue to operate below capacity. (Mission Bay EIR, Vol. II, pp. VI.E.31-38, 42-43, 61-62, 71-82, 85-89, 91-92, 94-99, 101-104, 106-109, 113-122, 128-137, 216-217, and 230-231; South of Market EIR pp. 98-105, 112-124, and C-43 to C-45.) If the train were extended to Market Street, ridership might be further increased; information from the CalTrain extension studies is not yet complete.

Regional Highway Constraints

As a result of growth in regional travel demand, the following freeway segments could constrain San Francisco travel: the I-80/580/I-880 interchange in Oakland; the Caldecott Tunnel on State Route 24; I-80 in Alameda and Contra Costa Counties; U.S. 101 in Marin County, and U.S. 101 south of I-380 in San Mateo County. (Mission Bay EIR, Vol. II, pp. VI.E.133-140.)

Key Impact Area Roadways

The street network would be improved in a portion of the Mission Bay area under the I-280 Transfer Concept Program (TCP), which includes removal of the I-280 stub between Third and Sixth Streets, widening and improving King Street, and construction of new I-280 on and off-ramps from King Street.

Freeways and Freeway Ramps. It is expected that local South of Market streets and intersections not serving freeway ramps would continue to operate in a generally free-flowing manner in the future, at least to 2000. Severe congestion would continue to occur in both 2000 and 2020 on

several of the James Lick (I-80) freeway approaches in the South of Market Area. Those streets and freeway ramps serve traffic destined for the Bay Bridge and Peninsula. Several of those streets are heavily congested now. The number of severely congested I-80 approach intersections would increase by the year 2000 and increase again by 2020, regardless of whether Mission Bay is developed.

Arterial Streets. The point of greatest congestion within Mission Bay in 1985 was the intersection of Third and Berry Streets. That intersection was heavily congested because it served both City traffic on Third Street and traffic destined for Downtown on the I-280 freeway. With the I-280 ramps relocated from Berry to King Street as proposed, the intersection of Third and King Streets would replace Third and Berry as the point of greatest congestion within Mission Bay. The intersection of Third and King would be severely congested in all Mission Bay Alternatives by 2020. Most of the traffic passing through this critical intersection would not be destined for Mission Bay. It would be traffic from other areas, including particularly the Downtown, using the I-280 freeway interchange or traffic which needs to pass through Mission Bay on its way to other parts of the City.

A second intersection along four-lane King Boulevard at Fourth Street would also be congested by 2020. That congestion would again be caused primarily by traffic not destined to Mission Bay. Congestion projected for King Street and its intersections in the Mission Bay Project Area could be mitigated with a six-lane roadway, with parking permitted only at off-peak hours. To mitigate congestion projected for Third and Mariposa Streets, that intersection could be widened to allow double southbound right-turn lanes on Third and a separate eastbound left-turn lane on Mariposa.

Mission Bay growth would account for less than five percent of total traffic at the freeway approaches and never more than 15% of total traffic on the major through routes within the Mission Bay area. Growth in the South of Market area would account for a smaller proportion of total traffic at freeway approaches than would Mission Bay. The four project sites within the Rincon Point/South Beach Redevelopment area would contribute a fraction of one percent of the traffic at these intersections. (Mission Bay EIR, Vol. II, pp. VI.E.2-13, 140-148, 166-175, 199-201, and 218-219; South of Market EIR, pp. 105-106, 124-126, and C-47 to C-48.)

Local Transit Routes

For the local street system to operate at the level described above, there would have to be a high level of public transit use in Downtown & Vicinity. In 1985, about 55% of all afternoon peak-hour outbound trips from the Downtown & Vicinity were on transit. That level of transit could grow to about 70% of all trips, based on the increased capacity of transit systems expected to be available by 2000. The City has a proposed Waterfront Transportation Program that includes The Embarcadero Roadway Project, the MUNI Metro Line extension to the CalTrain terminal at Mission Bay and the F-Line extension.

The MUNI Metro extension to Mission Bay would also serve the southern portions of the South of Market area. An improvement in the southwest corridor MUNI service would also occur as a result of completion of the MUNI Metro turnaround at the foot of Market Street, the Subway Signalling System, and the Light Rail Vehicle Procurement Projects in the future. Other MUNI corridors are expected to remain at current levels of service, at least through year 2000. (Mission Bay EIR, Vol. II, pp. VI.E.148-152, 175-178, 201-202; South of Market EIR, pp. 112-117, C-45 to C-46.)

PROJECT IMPACTS

This section describes the process used to project future peak-hour person and vehicle trips for the four changed sites. Person trips and vehicle traffic volumes are analyzed for the P.M. peak hour (4:30 P.M. to 5:30 P.M.), when traffic volumes near the project are highest.

Project Trip Generation

Trip generation rates are used to relate the type and size of a specific development to the number of person and vehicle trips originating at or destined for it. A comparison of the daily, peak-period, and peak-hour trip generation rates for the various development elements of the four changed sites are presented in Table 6, page 111. These rates incorporate data from the City of San Francisco Guidelines for Environmental Review, other studies in San Francisco, the Institute of Transportation Engineers Trip Generation and the 1980 Rincon Point/South Beach EIR.

TABLE 6

PERSON TRIPS GENERATED BY THE PROPOSED PLAN AMENDMENT

		Person Trips Generated by Proposed Project					
		Daily		Peak-Period		Peak-Hour	
Site	Proposed Use	Rate	Trips	Rate	Trips	Rate	Trips
C	500,000 SF Office	18.1	9,050	2.76	1,376	1.86	932
D	24 DUs (Sr. Housing)	6.4	154	1.38	34	0.77	18
I	12,500 SF Commercial	150	1,875	30	375	15	187
	422 DUs	10	4,220	1.8	760	1.0	422
	SUBTOTAL		6,095		1,135		609
N	100,500 SF Commercial	150	15,075	30	3,015	15	1,508
Person Trips	TOTAL		30,374		5,560		3,067

DU = Dwelling Unit
Room = Occupied Room
SF = Gross Square Feet of Floor Area

Sources for Trip Generation Rates:
Office - City of San Francisco Guidelines for Environmental Review (July 1989)
Retail - City of San Francisco Guidelines for Environmental Review (July 1989)
Residential - San Francisco Department of City Planning (1/9/90 Meeting)
Senior Housing - Trip Generation (ITE, June 1988)
Marina - 1980 EIR

Source: DKS Associates

The four changed sites would generate approximately 33,370 daily person trips ends (pte), including approximately 5,560 pte during the P.M. peak period and 3,070 pte during the P.M. peak hour (see Table 6). While there are existing activities at each of the sites, most of the trips to the four development sites are generated by parking lots which would be removed by the project. No reduction in trip activity has been assumed in order to reflect a worst case scenario for project impact analysis (i.e., all new trips are added on top of existing trips).

Project Person Trip Mode Split

The trip distribution and transportation mode split for the four changed sites were developed from a series of studies done for the City of San Francisco Department of City Planning. Data from the Mission Bay EIR and South of Market EIR were evaluated in developing trip generation and mode split for the four changed sites. Table 7, page 113 shows the projected P.M. peak-hour travel demand by mode for each of the four project sites and in total. Due to the retail uses proposed, the greatest number of trips would be walk trips from in and around the area. Trips by auto and MUNI would be the other significant modes of travel.

Transit Impacts

There are about eight MUNI routes with stops in the vicinity of the four project sites. The Transbay Terminal is located about three to five blocks from the four sites. MUNI Metro and BART service in the Market Street subway are accessible via the Embarcadero and Montgomery Street stations (three to seven blocks north of the sites).

The proposed development for Sites C, D, I and N would generate approximately 810 new transit trips during the P.M. peak hour. Most of these would be on MUNI bus and subway trips. In the future, MUNI Metro would be extended along the waterfront south toward Mission Bay. This would place Metro transit stops within a block of each of the four proposed project sites. The three Metro transit stops are proposed to be at Hills Plaza (Embarcadero at Folsom), South Beach (Embarcadero at Brannan) and King Street at Second Street. This MUNI Metro extension would facilitate transfers to the other modes of transit (CalTrain, BART, Golden Gate Transit, AC

TABLE 7

PROJECTED TRAVEL DEMAND BY MODE - PROPOSED PLAN AMENDMENT*
P.M. PEAK HOUR

Travel Mode	Site C	Site D	Site I	Site N	Total
Vehicle (auto driver and auto passenger)	484	6	177	170	838
Transit	370	6	186	249	811
Walk	47	6	240	1,082	1,376
Ferry/Other	32	0	6	6	44
TOTAL	932	18	609	1,508	3,068
Breakdown					
Auto Driver	382	6	155	128	671
Auto Passenger	102	1	22	42	166
MUNI	155	6	167	154	481
BART	104	0	12	59	175
AC Transit	51	0	3	21	76
SamTrans	15	0	1	2	17
CalTrain	20	0	1	2	22
Golden Gate Transit	25	0	2	12	40
Walk	47	6	240	1,082	1,376
Ferry	8	0	2	6	16
Other	23	0	4	0	28

Source: DKS Associates

* Numbers may not add up due to rounding

Transit, SamTrans and the ferries). The MUNI Metro extension is projected to serve between 6,200 and 8,500 persons during the two-hour P.M. peak period. BART would carry about 175 additional patrons in the P.M. peak hour with the proposed project, primarily Site C office workers.

The proposed project would contribute to overall increases in transit ridership in the major transit corridors leaving downtown San Francisco. Existing peak-period and peak-hour transit ridership would increase, amounting to about 1.1 percent of available transit capacity. The office uses proposed for Site C would contribute the greatest number of new transit trips -- over 45% of all the transit trips of the proposed project. Table 8, page 116 summarizes the future transit loadings at key screenlines with the project. Most transit agencies would operate at level of service D or better in the future, including cumulative growth to 2000, with the exceptions of BART's trans-bay service, AC Transit, and MUNI routes to northwest San Francisco. Transit capacity to the East Bay would be constrained. The transit increases caused by the proposed project individually would be minor compared to overall capacity. Project transit patronage would not be concentrated on any individual transit routes enough to increase passenger loads beyond the level of daily variation.

Traffic Impacts

The following sections describe traffic impacts of the proposed project. The regional impacts of the project are discussed followed by a description of local street impacts. Local traffic impacts are analyzed for three scenarios:

- existing traffic;
- existing plus cumulative traffic (projected to Year 2000); and
- existing plus cumulative plus project traffic.

Freeway Impacts. The project would contribute to increases in regional traffic on the major freeways serving downtown San Francisco. Traffic generated by the project would increase total traffic on major freeways during the P.M. peak period and the P.M. peak hour by about 0.6% or less (see Table 9, page 116). Such increases would not be measurable against the day-to-day fluctuations in traffic volumes. Because the Bay Bridge P.M. peak-hour eastbound traffic flow is

TABLE 8

OUTBOUND TRANSIT DEMAND AND CAPACITY AT SCREENLINES
CUMULATIVE YEAR 2000 (P.M. PEAK HOUR)

Screenline	Transit Operator	Transit Person Trips Without Project	Transit Person Trips With Project	Capacity[1]	Year 2000[2] Demand Without Proposed Project D/C	Year 2000[2] Demand Without Proposed Project LOS	Year 2000[2] Demand With Proposed Project D/C	Year 2000[2] Demand With Proposed Project LOS
Northeast SF	MUNI	8,250	8,700	7,000	1.19	D	1.24	D
Northwest SF	MUNI	9,760	9,800	7,700	1.27	E	1.27	E
Southwest SF	MUNI	13,450	13,500	13,200	1.02	D	1.02	D
Southeast SF	MUNI	3,640	3,700	3,050	1.19	D	1.21	D
North Bay	GG Transit	7,410	7,450	7,200	1.03	D	1.04	D
	Ferry	1,430	1,450	1,900	0.75	B	0.75	B
East Bay	AC Transit	12,570	12,650	9,700	1.30	E	1.30	E
	BART	29,540	29,650	18,000	1.64	D	1.65	D
South Bay	BART	7,790	7,850	9,000	0.87	B	0.87	B
	CalTrain	2,380	2,400	4,600	0.52	A	0.52	A
	SamTrans	2,430	2,450	3,700	0.66	B	0.66	B

[1]Mission Bay EIR, Tables VI.E.13, p. VI.E.98.
[2]DKS Associates

Note: D/C = Demand-to-Capacity Ratio; LOS = Level of Service (see Appendix for definitions).

Source: DKS Associates

TABLE 9

HIGHWAY VOLUMES AT SCREENLINES
P.M. PEAK HOUR - OUTBOUND DIRECTION

Screenline/Highway	Year 2000 Volume Without Project	Year 2000 Volume With Project	% Change Due to Project
North Bay/Golden Gate Bridge	7,190	7,215	0.3
East Bay/SF-Oakland Bay Bridge	9,650	9,710	0.6
South Bay/Highway 101	7,985	8,010	0.3
South Bay/I-280	7,070	7,080	0.1

Source: DKS Associates and Mission Bay EIR, Table VI.E.15, pp. V.I. 108-109.

functionally at capacity, the travel demand from the project would not be expected to increase the flows on the Bay Bridge in the peak hour; rather, the East Bay-bound auto traffic from the project would most likely compete with and possibly displace existing users of the Bay Bridge into later portions of the peak period. This competition for access would occur at the on-ramps to the Bay Bridge and any displacement of existing users to later time periods would depend on the time of arrival of project vehicles at the on-ramps. Some drivers would be expected to shift to carpools or transit as a result of cumulative displacement.

Arterial and Local Street Impacts. San Francisco's Mayor Art Agnos currently has a proposal to remove the Embarcadero freeway which has the support of the Board of Supervisors, the Sierra Club and the Chinatown Merchants Association. The proposal calls for the freeway to be relocated below ground from Mission Street to near Washington Street. The impacts associated with this plan were not analyzed since no detailed traffic operations data for the below ground freeway have been developed. A preliminary analysis presented to the Board of Supervisors estimates that the proposed expressway would have about 85% of the capacity of the freeway.[10] Therefore, the analysis performed in this study assumed the Embarcadero freeway to be located above ground.

Traffic volumes for the 16 study intersections were analyzed for the P.M. peak hour. To attain base 1989 volumes, counts taken between the years 1982 and 1988 were factored based on background growth in the area. To develop cumulative 2000 traffic volumes, a growth factor of one percent per year[11] was applied to the base 1989 traffic volumes, for a total increase of 11% (1989-2000). The growth factor represents the "worst case" scenario for unconstrained traffic conditions without additional mode shifts to transit. Actual traffic growth in the project area could be less, due to mode split changes. The cumulative 2000 traffic volumes were then reduced by traffic that would have been generated by the existing Redevelopment Plan for sites C, D, I and N, since this traffic is included in the one percent growth factor.

Table 10, page 118 summarizes the V/C ratio and level of service at each study intersection. Differentiation is made between signalized (or future signalized) and unsignalized intersections for purposes of analysis. In year 2000, three of the sixteen intersections would operate at a level of service worse than the existing LOS without any development on the four project sites. With the proposed project in Year 2000, five intersections would have reduced levels of service; two intersections would operate at LOS "D": 1) Broadway/The Embarcadero, and 2) Brannan Street/The Embarcadero. These intersections would experience changes in their volume-to-capacity ratios of 0.07 and 0.06, respectively, due to the new land uses proposed for the four sites.

Site N Access. Due to the location of Site N on the bay side of The Embarcadero, a specific evaluation of circulation needs was performed. Nearly 130 vehicle trips would be generated by the commercial use on Site N in the P.M. peak hour. With the existing configuration of The Embarcadero and no realignment of Townsend Street, access to Site N should be right turn in/right turn out (at the existing Pier 40 parking lot location), to avoid disruption of southbound traffic on The Embarcadero. Since a site plan has not been determined, adequate stacking room should be provided for seven to ten vehicles, either on-site or in a northbound right turn lane. Some motorists bound for Site N traveling southbound on The Embarcadero would be unfamiliar with the area and, due to the lack of a raised median, could make an illegal southbound left turn into the site. The correct maneuver for southbound motorists would be to continue south to the Marina entrance south of Pier 40, then make a left into the parking area and turn around. Access to the pier with the existing configuration of The Embarcadero would be confusing and possibly unsafe. Therefore, it is recommended that until Townsend Street is realigned for the MUNI Metro

TABLE 10

PROJECTED LEVELS OF SERVICES

Current/Future Signalized Intersections[1]	Existing 1989 (V/C)	Existing 1989 LOS	Cumulative[2] Without Project (V/C)	Cumulative[2] Without Project LOS	2000 With Project[2] (V/C)	2000 With Project[2] LOS
1. Broadway/The Embarcadero	0.71	C	0.74	C	0.81	D
2. Howard Street/The Embarcadero	0.55	A	0.71	B	0.74	C
3. Harrison Street/The Embarcadero	0.56	A	0.58	A	0.61	B
4. Folsom Street/The Embarcadero	0.56	A	0.57	A	0.66	B
5. Bryant Street/The Embarcadero	0.61	B	0.59	A	0.63	B
6. Brannan Street/The Embarcadero	0.69	B	0.76	C	0.80	D
7. Townsend Street/The Embarcadero	0.70	C	0.70	C	0.74	C
8. Second Street/Bryant Street	0.54	A	0.59	A	0.59	A
9. Second Street/Brannan Street	0.61	B	0.64	B	0.69	B
10. Second Street/Townsend Street	0.50	A	0.54	A	0.56	A
11. Second Street/King Street	0.33	A	0.36	A	0.38	A
12. Third Street/King Street	0.52	A	0.57	A	0.59	A
Unsignalized Intersections[3]						
13. Bryant Street/Beale Street	C or better		C or better		C or better	
14. Brannan Street/First Street	A/B		A/C		A/C	
15. Folsom Street/Spear Street	A/A		A/A		A/A	
16. Spear Street/Howard Street	C or better		C or better		C or better	

[1]Assumes unsignalized intersections along The Embarcardero would be signalized after completion of The Embarcadero Surface Roadway Project. Some intersections would have turn lanes added.
[2]Includes turn lane improvements that are part if The Embarcadero Surface Roadway Project.
[3]Levels of service for 2-way stop unsignalized intersections show the major movement (first street name) level of service and the minor movement (second street name) level of service; 4-way stop unsignalized intersections were measured against level of service "C" service volumes shown in Table 10.7 of the 1985 Highway Capacity Manual.

Source: DKS Associates

extension, that Site N access be limited to right turn in/right turn out, and that "Pier 40 access" signage direct southbound motorists on The Embarcadero to a safe turnaround point.

If the Townsend Street realignment (for the MUNI Metro Extension) precedes development of Site N, the most efficient access to Site N would be directly in line with the realigned Townsend Street. This would allow traffic exiting Site N to move concurrent with Townsend Street traffic.

Project Parking Impacts

Proposed project parking, Redevelopment Agency parking standards and the estimated parking demand are discussed below. Table 11, page 120 summarizes parking conditions of the proposed project, indicating the number of existing spaces removed with the project.

City Code Parking. In the Rincon Point/South Beach Redevelopment Area, City Planning Code parking requirements do not apply. For informational purposes only, the number of parking spaces that would have been required based on the City Planning Code Article 1.5 was calculated for each of the four project sites. Site C is located in the Downtown C-3-S.5 zoning district which does not require parking for office use.[12] Site D is in the M-2 zoning district which would require one parking space for every five dwelling units of senior housing. Site I and Site N are in the M-2 zoning district which would require one space for every residential dwelling unit, one space for every 500 square feet of retail area up to 20,000 square feet, and one space for every 250 square feet of retail area over 20,000 square feet. The project would meet code requirements, except for Site N where the demand for parking spaces would be significantly less than would be indicated by City Planning Code requirements. The project sponsor proposes to provide 150 parking spaces for Site N, which would be adequate given a total employee and visitor demand for 144 spaces.

Redevelopment Agency Parking Standards. The Redevelopment Agency has its own parking standards adopted as design objectives for the Rincon Point and South Beach sub-areas.[13] The project would also meet these standards. The maximum number of off-street parking spaces that may be provided according to Redevelopment Agency standards is as follows:

TABLE 11

PROJECT PARKING REQUIREMENTS

Site	Existing Parking	Proposed Project Parking Supply and Projected Demand			Other Estimates of Project Parking Space Needs		
		Supply	Demand	Difference	City Code[1] (Minimum)	Redevelopment Agency Standards (Maximum)	Off- Street Freight Loading Spaces Calculated According to City Code (Minimum)[1]
C	272	100	250	-150	0	100	5
D	131	10	18	-8	5	24[2]	0
I	33	500	320	180	447	447	2[3]
N	51	150	144	6	362	201	3
TOTAL	487	760	732	28	814	772	10

[1] The Redevelopment Area does not fall under the jurisdiction of the City Planning Code for parking requirements. These calculations are presented for information only.

[2] The Redevelopment Agency standard applied here is for residential space, not senior housing as proposed, since no standards are specified by the Redevelopment Agency for senior housing.

[3] Assumes an average dwelling unit size of 1,155 sq. ft. or less; otherwise 3 spaces would be indicated by the City Planning Code.

Source: DKS Associates

Site C, which is located in the Rincon Point sub-area, may provide one space for every 5,000 square feet of office floor area.

Site D, which is located in the South Beach sub-area, may provide one space for every residential dwelling unit (a separate category for senior housing is not provided).

Site I, which is located in the South Beach sub-area, may provide one space for every 500 square feet of retail area.

Site N, which is located in the South Beach sub-area, may provide one space for every 500 square feet of retail area.

Parking Demand. Project parking demand differs from codes or standards in that demand reflects the best estimate of actual parking conditions based on vehicle trip generation. Although three of the four project sites are outside the C-3 Downtown study area boundary, the relative proportion of work to non-work trips and the parking turnover rates would be similar to those characteristics of other development in the project vicinity, which borders the Downtown and South of Market study areas. The detailed calculation methodology is shown in Appendix A.

While the proposed project generally provides adequate parking to meet its needs on each site, the proposed office use (Site C) would generate a parking shortfall of 150 spaces. This is consistent with downtown policies for the auto control area.

Existing Parking to Be Removed. Existing parking would be removed by the proposed project as shown in Table 11. No provisions have been made for accommodating this long-term parking elsewhere. Although motorists could compete for parking in nearby public lots and garages, it is likely that elimination of these spaces combined with increased regional highway congestion would further encourage these or other motorists to shift to mass transit or ridesharing.

Freight Loading. The proposed project would generate approximately 140 truck stops per day. A detailed calculation of daily truck stops for each site is provided in Appendix A. The majority of these service vehicle trips would be made by vans, pickups or step vans. Site C (office use) would generate the most service activity and would require an off-street loading and maneuvering area. The other sites would not generate more than 10 to 25 service delivery trips per day.

Although not applicable within the Redevelopment Area, The City Planning Code requirements for service loading were evaluated for each site for informational purposes only. Table 11 also shows the total number of freight loading spaces that the City Planning Code would suggest for each site. Site C is in the C-3 district, where the City Planning Code would require five loading spaces with off-street maneuvering area. Site D is outside the Downtown C-3 district and would not require any loading spaces. Site I would require two spaces and Site N three spaces. If site plans are developed with these loading areas, no impact to local circulation would occur due to inadequate loading space and each site's needs would be met. The minimum dimensions for the required loading space are 12' in width by 35 feet in length, with 14 feet vertical clearance.

Project Pedestrian Impacts

Presently pedestrian conditions in the project vicinity are at level of service A at all times of the day. Sidewalks are generally 7 to 12 feet in width, with crosswalks varying from 9 to 15 feet provided at most legs of the signalized intersections.

Cumulative peak 15-minute volumes have been estimated in the vicinity of each site for the proposed development (see Table 12 below). The proposed project would increase pedestrian traffic near each site, but pedestrian flow conditions would remain at levels of service A and B. Definitions of pedestrian flow are shown in Appendix A. In general, there would not be significant impacts to sidewalk or crosswalk pedestrian flow caused by the proposed project at any of the four sites provided that sidewalks and crosswalks of 12 to 15 feet in width are constructed on all sides of each project.

The Embarcadero Surface Roadway Project, part of the City's Waterfront Transportation Program, would provide signalized mid-block crossings along The Embarcadero as well as pedestrian-actuated crossings at all of the future signalized intersections along The Embarcadero. These improvements would help accommodate the projected increase in pedestrian activity.

Project Construction Impacts

Detailed plans for construction of the four sites have not been developed at this stage. In general, construction of these sites would involve closure of adjacent sidewalks and parking lanes.

TABLE 12

YEAR 2000 PEDESTRIAN FLOW WITH PROPOSED PLAN AMENDMENT
PEAK 15 MINUTES

Site	Peak 15-Minute Pedestrian Volume 2000 Without Project	Peak 15-Minute Pedestrian Volume Plan Amendment Project	Flow Rate[1] Without Project	Flow Rate[1] With Project	LOS[2] Without Project	LOS[2] With Project
C	240	352	1.78	2.61	A	B
D	160	163	1.19	1.21	A	A
I	60	168	0.44	1.24	A	A
N	22	356	0.16	2.64	A	B

[1] Peak 15-minute flow rate = Ped/min/ft of crosswalk width.

[2] Level of Service see Table A-3.

Source: DKS Associates

Temporary sidewalks would be used with some short-term closures during construction. All lane and sidewalk closures are subject to Department of Public Works and MUNI review. Since traffic volumes are not large on adjacent streets, no significant disruption to traffic is expected with normal construction practices. Truck movements to each site would focus on use of The Embarcadero and adjacent major thoroughfares. Routes to the freeway are short which would minimize construction traffic impacts on City streets. Temporary lane or street closures related to reconstruction of the Embarcadero Freeway north of the traffic impact area may delay construction traffic using City streets that connect the project construction sites with I-80 ramps. Delay to and due to construction vehicle traffic would be minimized by a mitigation that limits construction vehicle traffic to the off-peak 9:00 A.M. to 3:30 P.M. period.

1. San Francisco Department of City Planning, Mission Bay Draft EIR (86-505E), August 12, 1988.

2. San Francisco Department of City Planning, South of Market Plan EIR (85-463E), certified December 7, 1989.

3. San Francisco Department of City Planning, Downtown Plan EIR (EE81-3), certified October 18, 1984. The information in this document has since been superseded by the Mission Bay DEIR.

4. San Francisco Department of Public Works, 1983 San Francisco Corridor Count, July 1983.

5. Mission Bay EIR, Vol. II, p. VI.E.52; South of Market EIR, p. 109-112, C-39.

6. Mission Bay EIR, Vol. II, pp. VI.E.31-34, 50-52, 56-83, and 211-214; South of Market EIR, pp. C-47.

7. Mission Bay EIR, Vol. II, pp. VI.E.31-36, 62-67, 79, 93-99, 103-104, 115-124, 217 and 231; South of Market EIR, pp. 100-102, 114-117, C-20 to C-21, and C-37.

8. Mission Bay EIR, Vol. II, pp. VI.E.31-34, 41, 71-78, 80-82, 84-89, 92-100, 103-111, 114-125, 129-137, 214-215, and 225-226; South of Market EIR, pp. 98-100, 103-105, 112, 118, 119-124, and C-41 to C-42.

9. Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-41, 71-78, 80-82, 87-91, 94-98, 100-101, 103-123, 126-127, 129-131, 133-140, 215-216, and 226-230; South of Market EIR, pp. 96-100, 102-1-4, 111-124, and C-42 to C-45.

10. Embarcadero Demolition and Replacement Report to the Board of Supervisors Pursuant to Resolution #262-90, Art Agnos, Mayor, July 30, 1990.

11. The growth factor of one percent per year was estimated by the City of San Francisco, Department of City Planning based on previous analysis work and prior studies.

12. Parking required by City Planning Code for each type of development was obtained from the City of San Francisco, Department of City Planning.

13. Parking standards for Rincon Point/South Beach Sub-areas obtained from "The Design for Development" Rincon Point-South Beach Redevelopment Project Area.

D. GEOLOGY AND SEISMICITY

The following information is new and adds to the Geology/Seismicity Impacts section on pages 110-112 of the 1980 Final EIR.

INTRODUCTION

The proposed project defines changes in uses at the four project sites, but does not define structural alterations that would accommodate those uses. Although no geotechnical report has been prepared for the sites, the subsurface conditions are generally known and the need to provide adequate foundation support in such conditions, for office, commercial, residential and hotel uses is required in the 1989 San Francisco Building Code. The potential impacts briefly discussed below consist of effects anticipated in the project area. As such, they have been taken into consideration in the project design, and mitigation measures have been included in the project to reduce or avoid the potential hazards posed by the conditions. These measures are listed in Chapter V, page 160 of this EIR.

TOPOGRAPHY

The amount of grading and excavation needed for the proposed project is not known specifically. However, only a minor amount of alteration to surface topography would occur because the sites already contain structures that would be renovated or replaced by the project. To the extent that excavation extended below existing slabs-on-grade, spoils would need to be transported off-site for disposal at an authorized landfill, and/or recompacted as engineered backfill beneath the slabs-on-grade of the proposed project structures.

SETTLEMENT

Total and differential settlement would occur whenever structures were supported directly on fill over Bay mud. The amounts and rates of settlement would depend on preconsolidationing of the fill and mud, rate of loading, amount of loading, respective depth of the fill and mud. Design and engineering of each site would be required to meet the current standards of the 1989 San Francisco Building Code regarding foundation support. Pile foundations probably would be necessary for the taller (heavier) structures to overcome the potential settlement hazards of an engineered fill over Bay mud at the construction sites. Foundation and structural support details would be required

to be presented by California-licensed geotechnical and structural engineers and included as part of the project design.

SEISMICITY

Potential seismic-related impacts include groundshaking and ground failure. Groundshaking intensities from a maximum credible earthquake on a local segment of the San Andreas fault would range from D (strong) at the base of the Bay Bridge and on the bedrock covered terraces of South Beach, to B (violent) in the filled areas of Rincon Point and adjacent to the China Basin Channel. The Bay mud would act as an amplifier for low frequency (long) seismic waves, resulting in Modified Mercalli intensities of VIII and XI. Such an event would release at least 30 times as much energy as the October 17, 1989, Loma Prieta earthquake. Current building code anti-seismic requirements are based on the 1988 Uniform Building Code standards for Seismic Zone 4, the highest in the country. New and renovated structures for human occupancy would be required to meet these standards to eliminate the possibility of structural collapse and to reduce the potential for personal injury or death.

Ground failures include seismically induced liquefaction, subsidence, and lateral spreading. Liquefaction can occur in loose, saturated fill when seismic vibration increases water pore pressure to such an extent that the "solid" fill reacts like a liquid ("quicksand"). The resultant loss of soil support for foundations can cause buildings to sink, overturn or collapse. Subsidence of loose fills or sands occurs when seismic vibration shakes the particles into a more densely packed configuration (the same number of particles take up less space). Loss of soil support for foundations can result. Lateral spreading can occur in liquefied fills as the soils flow away from beneath the load imposed by the foundations supported on the fill. It also can occur in Bay mud as it shifts in response to seismic vibration. Loss of soil support for foundations can result. The previously mentioned anti-seismic standards in the 1989 San Francisco Building Code include the analysis of site soils by geologists and/or California-licensed engineers to assess the potential for these types of support loss and to design a foundation that would not be susceptible to them.

EXCAVATION AND DEWATERING

Excavation for foundations and basement levels conducted to depths greater than about 0 feet SFD would reach below the existing water table and possibly below the basement slab levels of adjacent buildings. Pile foundations probably would be necessary because the fill and Bay mud layers would not provide reliable support for structures during earthquake conditions. End-bearing support or frictional support pile design would reduce anticipated settlement and provide seismic support. Predrilling to within several feet of design depth probably would be necessary.

Dewatering would be necessary during excavation below the water table. Dewatering could cause some settlement of nearby buildings. The project includes measures to avoid this potential impact (see Chapter V of this supplemental EIR).

The measures included in the proposed project to reduce, eliminate or avoid the potential geotechnical effects of, or on, the project are not intended to be an exhaustive catalogue of all conceivable actions. They are based on existing techniques, generally recognized by geotechnical consultants in the Bay Area to be applicable in the Bayside areas of San Francisco, feasible in the context of the proposed plan, and conservative in approach. They do not always rely on structural solutions, such as building more retaining walls, or installing heavier foundations. The timing of excavation activities, the continuation of current inspection procedures, and the maintenance of on-going repair programs often provide the most effective environmental protection.

The detailed recommendations regarding specific techniques and designs to reduce, eliminate or avoid geotechnical hazards would be provided by the reports of the geotechnical investigations for each proposed project site. Plan review, field inspection and site observation also would be involved in the mitigation of geotechnical effects. The completed site development plans would be reviewed by the City to determine conformance with the geotechnical requirements of the 1989 San Francisco Building Code. Final field inspection of the measures would be performed by a Certified Engineering Geologist (CEG) during the earthwork and construction operations. The observation of cuts, fills, backfills, foundation excavations, and the preparation of pavement subgrades would take place during these phases of site development. The recommendations of the geotechnical report and the inspecting CEG would be incorporated in the work and reported to the City as a standard requirement of the Building Permit.

E. DRAINAGE AND WATER QUALITY

This information is new and supplements the Hydrology Impacts section on page 113 of the 1980 Final EIR.

HYDROLOGY

Development allowed under the proposed Plan Amendment would not have a measurable effect on the volumes of water leaving the sites as runoff. The effective permeability of the sites would not be measurably altered from that of existing conditions.

Because the entire project area is above the 100-year tsunami run up level, there would be no impact from seismic seawaves.

WATER QUALITY

The potential to decrease the quality of the water of the Bay during the construction period of the projects is related to 1) the increase of silt, oil, fuel, paint or other materials typically found at construction sites in the runoff, and 2) the addition, to the existent contaminant load, of undesirable biologic and/or chemical elements from the dewatering discharge.

The quality of the surface runoff could be degraded as a result of construction allowed under the proposed Plan Amendment. Excavation activities on the sites for foundations could affect adversely the water quality downgradient of the sites through the transport of sediments (causing increased turbidity) and dissolved constituents (causing an increase in the contaminant load) during the construction period. Eroded soil could increase the suspended sediment load in the storm drainage system, thereby increasing the amount of treatment needed prior to discharge to the Bay. Given the limited area in which excavation would occur, it would be possible to control erosion and sediment transport impacts on each proposed construction site.

The quality of the surface runoff entering the storm/sewer system also would be altered slightly by the contaminant load associated with the development allowed under the proposed Plan Amendment. Areas such as parking lots tend to contain high levels of suspended solids, as well as gasoline and other hydrocarbons, oil and grease, rubber, lead, and other automotive related

contaminants. These materials already exist in the urban environment and are found, in various quantities, in urban stormwater runoff. Parking on many of the development sites currently is limited to the ground surface and exposed to the elements. Development allowed under the proposed Plan Amendment would contain covered parking where a lesser amount of open-air parking currently exists. The types of contaminants entering the drainage system would remain substantially the same, although the ratios of particular materials in the contaminant load may vary and the total volume of the load may increase slightly, as more parking surfaces are added or if presently pervious areas are paved. This increase would contribute to cumulative degradation of the quality of the water carried and treated by the system; however, the exact amount of each contaminant generated by the proposed project would be too low to be considered significant in itself.

Excavation for the construction of sublevels for parking, or of drive pits for foundations, would involve excavation near, or below the water table (about 0 feet SFD). Dewatering of some of the sites would be necessary. The sites would be isolated from the general circulation of groundwater. Any groundwater or stormwater seeping into the excavation would be removed through sump pumping, rather than by deep dewatering wells, to avoid lowering the water table off-site.

The quality of runoff from the development sites could be poorer than described above (regarding parking uses) if groundwater were found to be contaminated. There is record of groundwater contamination at Site K. There could be contaminants on other sites in the Redevelopment Area including the development sites, and there may be fuel leaks or other contaminants up-gradient from the various development sites that could have migrated. If contaminated groundwater exists beneath any of the sites, it could be exposed in the excavation or pumped from the site as dewatering discharge.

If contamination levels in the groundwater were above those allowable for long-term discharge to surface waters or to storm/sewer systems, the discharge of untreated water and the exposure of workers at the site to the water would be considered a significant effect of the project. Water treatment to remove contamination during the construction period would be required, by the San Francisco RWQCB, before the groundwater could be discharged to the downstream drainage system. The treatment probably would consist of a settling process and a scrubbing or filtering

process carried out by a mobile treatment unit brought to the sites. Although soil or groundwater contamination may be an existing condition, unrelated to the proposed Plan Amendment, the discharge and exposure that could occur would be the result of excavation associated with development under the Plan. A potential threat the public health would occur if direct contact were made with the contaminated water by humans.

An efficient on-site drainage system at each site would be required by the Department of Public Works, Bureau of Engineering. Runoff from the completed projects would continue to drain into the combined City storm/sewer system for treatment prior to discharge. The storm/sewer system has adequate capacity to carry and treat the runoff from the completed sites in the project area.[1] As required by the Department of Public Works, Bureau of Engineering, the Redevelopment Agency would require site developer(s) to implement measures to ensure that dewatering would not result in increased sediment deposition in the City storm/sewer, or settlement of nearby properties (DPW Standard Specifications, Section 108.07, 108.17, and 1108.08).

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1. San Francisco Clean Water, Nathan Lee, Sanitation Branch Engineer, telecommunication with EIP Associates, July 15, 1989.

F. AIR QUALITY AND CLIMATE

The following information is new and supplements the Climate and Air Quality Impacts Section on pages 89-95 of the 1980 final EIR.

Upon completion, development allowed under the proposed Plan Amendment would affect air quality in two ways. Emissions would be generated by project-related traffic, and by combustion of natural gas for building space and water heating. Transportation sources would account for the predominant project-related emissions.

Table 13 below shows the projected daily emissions of air pollutants in the year 2000 from traffic which would be generated by the proposed project. Projected daily emissions in the year 2000 for the City of San Francisco and the Bay Area have also been included.

CARBON MONOXIDE (CO)

The California Legislature mandated a biennial inspection and maintenance (I/M) program which applies to most cars and light trucks in California. This program went into operation in March 1984. Vehicles covered by the legislation must undergo a check consisting of a visual inspection of the vehicle's emission control system, measurement of tailpipe emissions while the vehicle is idling and comparison of the measured emissions rates to allowable limits for the appropriate year of manufacture and model of vehicle. Vehicles must have the required emission control equipment and must meet the specified standards for hydrocarbons and carbon monoxide. If required emissions control equipment is not present it must be installed. If all required equipment is in place but the vehicle's emissions exceed the standards, the owner must pay a maximum of $50 for service intended to result in compliance.

An annual I/M program was evaluated in the 1982 Bay Area Air Quality Plan based on the 1979 source inventory. Based on a predicted 25% reduction in hydrocarbons and CO emitted by the vehicles covered, a reduction in total motor vehicle-generated CO of about 18% would be expected. The reduction in total regional CO emissions would be about 16%. The reduction in total regional hydrocarbon emissions would be about six percent. Vehicle emission factors used in the model in the Downtown Plan EIR did not take the I/M program into account. To account

TABLE 13

PROJECTED DAILY POLLUTANT EMISSIONS FOR THE YEAR 2000
(TONS PER DAY)

Pollutant	Proposed Plan Amendment	San Francisco	Bay Area
Hydrocarbons	0.05	50.6	560
Nitrogen Oxides	0.090	41.6	492
Carbon Monoxide	1.14	181.3	2,170
Particulates	0.17	73.1	764
Sulfur Oxides	0.02	27.0	225

Source: Air Quality and Urban Development, Bay Area Air Quality Management District, Revised April 1988.

for reductions from the I/M program, revised (lower) background CO concentrations for the year 2000 are incorporated into the air quality analysis model for this project.

Curbside CO concentrations at selected intersections that would be affected by project-generated traffic and by cumulative development traffic were projected for conservative conditions, and are compared with ambient standards in Table 14, page 133. CO concentrations are predicted to be less in 2000 than they are currently and would not violate one- or eight-hour standards at any intersection in the future scenarios. In 2000 the average vehicle is expected to emit 43% less CO than in 1984 due to ongoing State and federal emissions controls.

Ozone

Nitrogen oxides (NO_x) and hydrocarbons (HC) are both chemical precursors of ozone. Motor vehicles emit more NO_x than HC, and the emissions from building natural gas combustion would consist primarily of NO_x. As demonstrated by the LIRAQ (Livermore Regional Air Quality model) regional ozone simulations conducted for the 1982 Bay Area Air Quality Plan, an increase in the

TABLE 14
EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS

Study Intersection	Averaging Time	Concentrations[1] Existing	2000 Without Proposed	2000 With Proposed
1. Third/King	1-Hour	11.1	8.0	8.0
	8-Hour	7.8	5.6	5.6
2. Second/King	1-Hour	10.4	7.4	7.4
	8-Hour	7.3	5.2	5.2
3. Second/Townsend	1-Hour	10.9	7.7	7.6
	8-Hour	7.6	5.4	5.3
4. Second/Brannan	1-Hour	10.9	7.7	7.7
	8-Hour	7.6	5.4	5.4
5. Second/Bryant	1-Hour	11.1	7.9	8.0
	8-Hour	7.8	5.5	5.6
6. Embarcadero/ Townsend	1-Hour	11.4	8.1	8.1
	8-Hour	8.0	5.7	5.7
7. Embarcadero/ Brannan	1-Hour	11.4	8.1	8.3
	8-Hour	8.0	5.7	5.8
8. Embarcadero/ Bryant	1-Hour	11.4	8.1	8.1
	8-Hour	8.0	5.7	5.7
9. Embarcadero/ Harrison	1-Hour	11.4	8.1	8.1
	8-Hour	8.0	5.7	5.7
10. Embarcadero/ Folsom	1-Hour	11.3	8.0	8.1
	8-Hour	7.9	5.6	5.7
11. Embarcadero/ Howard	1-Hour	11.4	8.1	8.3
	8-Hour	8.0	5.7	5.8
12. Embarcadero/ Broadway	1-Hour	11.6	8.3	8.4
	8-Hour	8.1	5.8	5.9

[1] All CO concentrations are expressed in parts per million (ppm). Calculations for all scenarios were made using the modified linear rollback methodology provided by the Bay Area Air Quality Management District (BAAQMD).

future NO_x emissions compared to HC emissions would lead to a decrease in ozone compared to present levels. This model had also shown that Bay Area ozone concentrations were expected to be within the federal standard in 1987, and thereafter. Numerous assumptions that went into this modeling were incorrect, and therefore ozone attainment in the Bay Area has not been achieved. However, reduction in ozone levels have been realized. As future NO_x emissions from cumulative development in San Francisco would exceed future HC emissions, this development would not lead to an increase in total Bay Area ozone concentrations.

At the same time, total emissions of both NO_x and HC are expected to decrease in San Francisco. Total NO_x emissions would decrease in downtown San Francisco by about two percent from 1984 to 2000, but would increase in the Bay Area by about five percent from 1984 to 2000. It is possible that excess NO_x emissions generated by cumulative development could increase ozone and/or nitrogenous oxidant concentrations further downwind, outside the Bay Area. In addition, NO_x emissions generated by cumulative development throughout the Bay Area could increase acid rain further downwind, outside the Bay Area. However, this potential would be relatively small due to the magnitude of the increase and to dilution over time and distance.

Emissions of NO_x traffic generated by development under the proposed Plan Amendment for the year 2000 would exceed the threshold criteria of significance as defined in the BAAQMD: Air Quality and Urban Development Guidelines for Assessing Impacts of Projects and Plans (hereafter referred to as the Guidelines). As defined in the Guidelines, projects which emit in excess of 0.075 tons of NO_x on a daily basis would have a significant impact. As illustrated in Table 13, NO_x emitted by the project in the year 2000 would be 0.09 tons/day. Emissions of hydrocarbons from traffic generated by the proposed project would not exceed the threshold of significance defined in the Guidelines. The Guidelines set the threshold at 0.075 tons/day, while the proposed project in the year 2000 is estimated to contribute 0.05 tons/day.

As defined in the Guidelines, any project or plan would also be considered to have a significant impact if emissions of any criteria contaminant generated by the project reaches or exceeds one percent of county emissions. Neither NO_x or hydrocarbons emissions from traffic generated by the proposed project would exceed one percent of the total emissions in the county for the year 2000.

Total Suspended Particulates and SO_x

Emissions of total PM_{10} resulting from construction and from vehicle trips generated by the project and cumulative development would increase, which could increase the frequency of violations of the PM_{10} standard in San Francisco, with concomitant health effects and reduced visibility.

Particulates emitted and entrained from traffic generated by the proposed project for the year 2000 would have a significant impact. The threshold criteria of significance defined in the Guidelines for particulates is set at 0.075 tons/day. As illustrated in Table 13, particulates emitted and entrained by traffic in the year 2000 are estimated to be 0.17 tons/day.

Emissions of sulfur oxides (SO_x) generated by the project and cumulative development would not bring San Francisco's sulfur dioxide (SO_2) concentrations measurably closer to violating the standard. Sulfur oxides emitted by traffic generated by the proposed project would not exceed the daily tons/day or the one percent of total county emissions threshold criteria of significance as defined in the Guidelines.

Relationship to Bay Area Air Quality Plan

The 1982 Bay Area Air Quality Plan contains strategies which consist primarily of HC and CO emission controls on stationary sources and motor vehicles, and transportation improvements, and are aimed at attaining the federal ozone and CO standards. As discussed above, emissions associated with development potential under the Amended Redevelopment Plan and other cumulative development are not projected by this EIR or the Downtown Plan EIR to increase ozone concentrations, and thus would not conflict with the objectives of the 1982 Bay Area Air Quality Plan regarding ozone. Cumulative downtown development had been projected by the Downtown Plan EIR potentially to result in a violation of the eight-hour CO standard at the Brannan/Sixth Street intersection as analyzed therein. Based on the emission factors which account for the I/M Program as revised since the modified linear rollback contained in the Downtown Plan EIR, the City no longer predicts violations of CO standards at the Sixth and Brannan intersection, or other intersections which have been modeled in the greater downtown. Based on the above, cumulative greater downtown development would not conflict with objectives of the 1982 Bay Area Air Quality Plan regarding CO.

G. NOISE

This information is new and expands upon the Noise Impacts Section on page 97 of the 1980 Final EIR.

The potential noise impacts associated with the redesignation of the land uses on these four sites fall into three areas:

(1) The compatibility of the proposed land uses with the on-site noise environment.
(2) The impact of noise generated by the use of the site on adjacent development.
(3) The impact of construction noise on adjacent development.

COMPATIBILITY OF THE PROPOSED LAND USES WITH THE ON-SITE NOISE ENVIRONMENT

Site C

Site C would have its land use redesignated from housing/hotel/retail to office use. The City and County of San Francisco has adopted guidelines for determining the compatibility of various land uses with different noise environments. These guidelines are contained in the Transportation Noise Element of the San Francisco Comprehensive Plan. Office uses are considered to be compatible with no special treatment in an L_{dn} of up to 70 dB. Between an L_{dn} of 70 and 75 dB, the guidelines recommend that new construction or development be undertaken only after detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.

Office buildings constructed in San Francisco are typically developed with fixed windows and are mechanically ventilated. The thickness of the glass in these buildings, and the fact that the windows are sealed, typically provides about 30 decibels of noise reduction. These buildings provide for adequate interior noise environment even when located in an L_{dn} of up to 75 dB. Above an L_{dn} of 75 dB it is sometimes necessary to include sound rated glazing in the facades facing the noise source. This treatment is used where sensitive interior spaces, i.e., conference rooms, executive offices are located on that side of the building.

As noted in the Noise Setting Section, no noise measurements were made on the site because the Embarcadero Freeway was closed for repairs due to the October 1989 earthquake. The L_{dn} is estimated to be below 75 dB based on previous measurements along the Embarcadero Freeway.[1] Since the L_{dn} does not exceed 75 dB, the office proposed on Site C would appear to be compatible with the on-site noise environment, although noise measurements should be conducted to determine the exposure of the facades facing the Embarcadero Freeway if/when the freeway is reopened and the site plan for development is submitted.

Site D

Site D would be redesignated from commercial to residential development. The City and County of San Francisco's Land Use Compatibility Guidelines indicate that residential developments located where the L_{dn} exceeds 60 dB should be discouraged. The primary reason for this is that is difficult to provide any outdoor areas with an acceptable noise environment. The L_{dn} at this site is about 76 dB. Given the fact that the Bay Bridge traffic noise emanates from above this site, it would be essentially impossible to shield outdoor areas to an L_{dn} of less than 60 dB which is considered an appropriate level for outdoor use areas. If however, this is primarily an apartment type use with an indoor orientation, residential uses could be developed to provide an acceptable interior noise environment.

The State of California requires that the interior level in new multi-family dwellings does not exceed an L_{dn} of 45 dB. This would require about 30 dB of noise reduction which could be achieved through the use of sound rated glass. The interior standard would only be met when the windows are closed. When this is the case, State law requires that an alternative means of ventilating the units be specified. Since the sound levels are high enough on this site to require that windows always be closed, it would be reasonable to provide air transfer ducts from the outside to the inside in each exterior room to take the place of an open window. These air transfer ducts could be equipped with a fan and should be acoustically treated to maintain the sound isolation of the building facade.

Site I

Site I would contain commercial and residential development. The L_{dn} at the back of the sidewalk, which is typical of where a building would be located, is 69 dB. According to the City and County of San Francisco Land Use Compatibility Guidelines commercial uses would be considered compatible without any special noise insulation requirements. As noted above, the City's Land Use compatibility guidelines indicate that residential developments located where the L_{dn} exceeds 60 dB should be discouraged. However, since housing on Site I would be provided in apartments, with an indoor orientation, residential uses could be developed to provide an acceptable noise environment.

Site N

Site N would be redesignated to include commercial use. The L_{dn} at 50 feet from the center of the nearest lane, typical of building setbacks along The Embarcadero is 73 dB. Commercial uses would be considered compatible in this noise environment only if needed noise insulation features are included in the design. Sound rated windows would be necessary on the facades facing The Embarcadero and the units would have to be mechanically ventilated.

PROJECT-GENERATED NOISE IMPACTS

Development on these sites would generate noise in two ways. The mechanical equipment associated with the buildings would potentially increase noise levels in the area, and the traffic generated by the project would potentially increase noise levels on the street serving the site.

Based on the traffic estimates made for each of the proposed land uses, calculations indicate that average noise levels would not noticeably increase as a result of the project. Sound levels would increase by less than 1 decibel during any hour of the day. A one decibel difference in the average traffic noise level is not detectable.

Since no actual projects have been proposed for any of the sites, it is premature to evaluate the potential impact of mechanical equipment noise and this would be evaluated on a case by case basis. In general, however, standard mechanical equipment should not create a noise problem given the existing high background noise levels at all these locations.

CONSTRUCTION NOISE IMPACTS

During construction on any of these sites noise levels would be temporarily elevated. The actual impact on a given land use would depend upon the building type, construction materials and the type of construction. These issues would need to be discussed as each project is proposed.

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1. City of San Francisco, I-280 Transfer Concept Program EIR, State Clearinghouse #83012509, Draft published September 28, 1984.

H. TOXIC AND HAZARDOUS MATERIALS

This information forms a new section to be added to the 1980 Final EIR, and should follow the Noise Impacts Section.

SITE K

The only site within the Rincon Point-South Beach Redevelopment Area that has had soil sampling and analysis performed is Site K, on which a redevelopment proposal for housing is being considered. Harding Lawson Associates (HLA) performed the site history, soil sampling and analysis pursuant to Article 20 of the San Francisco Municipal Code, and presented the findings in three reports titled "Article 20 - Site History Site K" (November 21, 1989); "Article 20 Site Assessment Phase II - Soil Sampling and Analysis, Site K" (January 9, 1990); and "Article 20 Site Assessment Phase III - Site Characterization, Site K" (Draft, April 25, 1990).

On the basis of the site history investigation, the following known or potential sources of soil and ground-water contaminants were identified.

On-Site Sources:

1. Five former underground storage tanks at 1 and 55 Townsend Street.
2. A former paint warehouse, former ship service companies and the former fork lift service company at 1 Townsend Street.
3. Former bus companies at 59 Townsend Street.

Off-Site Sources:

1. Former underground storage tanks at 2 Townsend Street.
2. Existing underground storage tanks at 72 and 90 Townsend Street.
3. A computer service company at 75 Townsend Street.
4. Railroad tracks along southern side of property and towards the north and east of the property.
5. Two former coal gasification plants near Second and Townsend Streets.

In 1987, seven underground fuel storage tanks were removed at 1, 49, and 55 Townsend Street as part of the San Francisco Department of Public Works Emergency Underground Tank Abandonment Program. The former tanks at 1 and 49 Townsend Street were located outside Site K, beneath the realigned portion of Townsend Street. The former tanks at 55 Townsend Street were located on Site K.

Total petroleum hydrocarbons (TPH) concentrations ranging from 5,300 to 20,000 ppm of aged gasoline were measured in soil samples collected from beneath the tank at 1 Townsend Street upon its removal in September 1987. The TPH concentrations in the soil exceeded the Regional Water Quality Control Board (RWQCB) action level of 1,000 ppm for soil remediation. Holes ranging to 1.5 inches in diameter were observed in this tank.

Soil samples collected beneath the tank at 49 Townsend Street had a trace TPH concentration below detection limits (10 ppm).

Three tanks were removed from 55 Townsend Street within Site K. TPH concentrations above 100 ppm were measured in soil samples taken beneath two tanks; a trace of TPH was measured in soil samples taken beneath the third.

Two additional tanks at 55 Townsend Street within Site K were contained in two adjacent concrete vaults. Following the removal of the tanks, a water sample from each vault was collected and analyzed, as well as a soil sample from outside of the southern end of the vault. The water in the vault contained 52 ppm of gasoline and a trace of diesel was measured in the soil sample.

Excavation and remediation were not part of the tank removal program. The soil containing petroleum hydrocarbons near the tanks was not removed or treated when the tanks were removed. The soil removed during tank excavation together with clean fill was placed in the excavations and the surface was restored with concrete or asphalt. In May 1989, soil remediation activities took place near the former tank at 1 Townsend Street and two former tanks at 55 Townsend Street to facilitate the realignment of Townsend Street; no remediation activities were conducted near the other two former tanks at 55 Townsend Street, as they were located outside of the realignment area.

Documented petroleum leaks at the site have impacted the soil and ground water. The HLA report states that it is unlikely that the former tank at 2 Townsend Street or the existing tanks at 72 and 90 Townsend Streets have impacted the soil and ground water at Site K. Based on the existing southerly ground water flow, it is unlikely that a potential leak from 72 or 90 Townsend Street could impact the ground water beneath Site K.

The HLA report notes that discoloration evident on an aerial photograph may indicate spills of oils, metals, or solvents resulting from activities at 55 Townsend Street, and that the computer service company at 74 Townsend may have released small quantities of solvents to the soil. Various chemical compounds may have been released by railroad cars on the former tracks near and on the site. In addition, solutions containing arsenic, pesticides or herbicides may have been sprayed near the tracks as a defoliant. The former gasification plants may have released waste products containing polynuclear aromatics to the sediments of San Francisco Bay before the site was filled.

The results of the chemical analysis performed on Site K indicate that on the basis of the total soluble lead concentrations, the soil would be considered a hazardous waste if it were to be exported from the site.[1] In addition, the soil excavated from the former tank locations may exceed the hazardous waste criteria based on the total petroleum hydrocarbons (TPH) concentrations. On the basis of the polynuclear aromatic hydrocarbons (PNA) concentrations, the soil would not meet the hazardous waste criteria, but special management procedures may be required. Unless a nonhazardous waste variance was received from the DHS, the soil exported from the site would have to be disposed of as a hazardous waste.

The Article 20 site assessment states that the soil would not exceed the oral, dermal, or inhalation toxicity based on the concentrations of the TPH, PNAs and lead. The soil may be considered as hazardous waste on the basis of lead concentrations that exceed the STLC, TTLC, EP Toxic concentrations, or TPH concentrations above 1,000 ppm. The State hazardous waste criteria for total and soluble lead is 1,000 ppm and 5 ppm, respectively. The DHS has in the past granted non-hazardous waste variances to soil with soluble lead concentrations below 50 ppm. The soil samples obtained from the northern portion of Site K contains less than 1,000 ppm total lead and

less than 50 ppm of soluble lead and therefore do not exceed the /DHS variance guidelines. The soil samples obtained from the southern half of the site exceed the variance guideline of 50 ppm pf soluble lead, TTLC of 1,000 ppm, and EP Toxic concentration of 5 ppm. Therefore, the report states it is not likely that a DHS nonhazardous waste variance would apply to the soil on the southern portion of the site.

PNA concentrations were detected throughout the site. The highest concentrations were noted in the northwest portion of the site at both shallow and deeper elevations. These concentrations do not exceed the State hazardous waste criteria; however, in the past the DHS has established a policy of requiring special handling of soils containing over 10 ppm, carcinogenic or 100 ppm total PNAs. The highest concentrations of carcinogenic PNAs was found to be 61.16 ppm, and the highest total PNA concentration was found to be 276.15 ppm. Regardless of State classification, the presence of PNAs could limit the disposal options of soil excavated and removed off site. A risk assessment would be required to determine the effects of the PNAs on worker and long-term occupant safety.

The on-site soil found to contain over 1,000 ppm TPH as diesel will require special handling and removal from the site in accordance with RWQCB and DHS guidelines.

Two options for soil management are available during construction: The soil could be managed as hazardous waste, or the DHS could be requested to grant a nonhazardous waste classification variance. Regardless of the DHS waste classifications, the RWQCB may require special management procedures for the disturbed or undisturbed soil.

Article 20 requires that a site mitigation plan (SMP) be developed to address the potential exposure hazards to workers on site during construction. Since hazardous compounds were detected on site, a SMP will be required for the proposed development.

OTHER REDEVELOPMENT SITES

With the exception of Site K, soils in the Redevelopment Area have not yet been sampled or analyzed. The historical record, however, suggests that toxic residues in soil probably occur in many places in the Redevelopment Area. Rail yards, which may have been treated extensively

with herbicides or pesticides, and other properties that have been occupied by industrial uses are especially sensitive. Wooden remnants of buildings, fences, platforms, and sheds anywhere in the Area are likely to be contaminated with chemical preservatives. Spills of oil and petroleum products could exist throughout the Redevelopment Area, especially in the old rail yards and auto maintenance yards. A hazard could exist from ruptured, leaking, or damaged containers and underground storage tanks that may still be stored or buried in the Redevelopment Area. Metal compound residues from many industries could persist. Remnants of hazardous materials spills or hazardous chemicals in sealed containers or tanks may be present. The Redevelopment Area fill itself could contain a variety of hazardous substances. Finally, isolated instances of "midnight dumping," where wastes from outside an area are secretly and illegally dumped at a site, could have occurred in the Redevelopment Area.

Until the Redevelopment Area parcels are sampled, the presence of dispersed toxic materials at concentrations that exceed State or federal standards cannot be confirmed. Because of gaps in the historical record and the possibility of dumping, the lack of a known historic industrial or rail use on a parcel should not be taken as implying that the parcel is uncontaminated.

Throughout the redevelopment period, hazardous contaminants could be encountered during excavation and site preparation, should the parcels to be developed not be properly surveyed for hazardous materials and cleaned up before construction commences. Undetected contaminants could also pose health risks for future occupants of the Project Area.

CLEANUP OF HAZARDOUS MATERIALS

Many parcels within the Redevelopment Area have had multiple industrial uses and have the potential to be contaminated with multiple hazardous substances. The Article 20 site assessment Phase III study performed for Site K, described above, states that lead concentrations in excess of DHS hazardous waste criteria and measurable concentrations of PNAs have been found at nine sites in fill material along the margins of the Bay in San Francisco. The study concludes, therefore, that elevated lead and PNA concentrations are common in the filled portions of the San Francisco waterfront, and the presence and the presence of these contaminants is not limited to Site K. For compliance with San Francisco's Hazardous Soils Ordinance, the soil throughout the Redevelopment Area would have to be tested prior to developing any parcel, since the land use

history of the Redevelopment Area indicates a high potential for hazardous material contaminants. The actual investigative and, if necessary, remedial methods would comply with Article 20 (the Maher ordinance), requiring that a site history, soil sampling, and chemical analysis be performed, and if necessary, a site mitigation plan (SMP) developed to address the potential exposure hazards to workers on site during construction. Site investigation and clean-up would be carried out on a parcel by parcel basis as a result of individual development proposals as redevelopment proceeded.

As noted above, since hazardous compounds were detected on Site K, a site mitigation plan would be prepared in compliance with Article 20 before any construction could take place on the site.

Much of the surface soil within the Redevelopment Area may be contaminated to levels that would require either treatment or removal from the site; those levels are set by State and federal regulations.

All of the hazardous waste materials potentially present in the Redevelopment Area can be removed or rendered harmless by means of existing technology. Some clean-up options, however, might be considered economically infeasible. The three types of cleanup possible for hazardous materials identified in the Redevelopment Area are on-site treatment and disposal, on-site internment, and off-site disposal.

Hazardous materials disposed of off-site would be transported to a Class I facility, as required by the Department of Health Services (DOHS) and the Environmental Protection Agency (EPA). Approval to truck wastes to a Class I site would have to be obtained in advance. The status of these facilities and the identities of wastes they are authorized to accept are often in a state of flux due to evolving regulatory rulings.

PUBLIC HEALTH RISKS

Toxic hazardous materials pose the most serious concern for health-related impacts within the Redevelopment Area. If not located and treated or removed, these toxic substances could pose long-term health hazards to clean-up crews and construction workers, as well as future residents, workers, and visitors. The most hazard-sensitive land uses included in the proposed Amended

Redevelopment Plan would be open space and residential areas. In addition, fish, songbirds, waterfowl and other wildlife would be at risk from these materials, either from direct contact with hazardous chemicals or solutions of hazardous chemicals, or by taking up the toxics by inhalation or by ingestion with their food supply. Commercial and industrial land uses would be less sensitive to the presence of hazardous waste contamination.

Clean-up of any hazardous materials found in the Redevelopment Area would itself carry some potential for public health impacts. Those impacts would depend to a large extent on the nature and amounts of material encountered, and the period during which clean-up were to take place. Direct hazards could be faced by clean-up crews and transportation workers. Clean-up would pose indirect hazards to nearby residents, businesses, visitors, wildlife, and others that might come in contact with fugitive materials at or near the clean-up site, or in transit. Without clean-up, however, existing risks to public health posed by hazardous materials would remain indefinitely.

There exists a related potential hazard to all involved parties from hazardous substances that might be overlooked during site survey and clean-up activities. Any overlooked materials might persist in the Redevelopment Area and pose a continuing, long-term hazard to construction workers, occupants, visitors, or wildlife in future years. For example, if any tanks of corrosive, reactive, or ignitable chemicals were not removed from the Redevelopment Area, the risk of accidental breaching or eventual leakage of their contents would be a risk not only to clean-up crews and construction workers, but to residents as well.

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1. Harding Lawson Associates, "Article 20 Site Assessment Phase III - Site Characterization Site K (Seawall Lot 333), San Francisco, California," Draft, April 25, 1990, p. 20.

I. HISTORIC AND ARCHAEOLOGICAL RESOURCES

The following information supplements the Historic and Archaeological Aspects Impacts Section on page 122 of the 1980 Final EIR.

Despite the prolific prehistorical archaeological record in the San Francisco Bay Area there is little archival data to suggest that there is any more than a low probability of encountering prehistoric cultural resources within the project area.[1]

Between the time the first Spanish ship sailed through the Golden Gate in 1775 and the discovery of gold at Sutter's Mill, population and maritime traffic in the San Francisco Bay area was extremely limited, centering on the Presidio and the Mission, both some distance from the present project site. Archival records indicate that except for a possible find of an isolated random nature, it is unlikely that cultural materials dating from the Spanish, Mexican or Early American periods will be encountered within the Rincon Point-South Beach Project Area.[2]

The South End Historic District, made up of many post gold rush warehouses, includes buildings in the South Beach/Rincon Point Redevelopment Area. The Oriental Warehouse is one of the more important buildings in the district.[3]

The Oriental Warehouse, under the proposed project, would retain only its outer walls; this would constitute an impact on the Oriental Warehouse. There would be considerable change to the Warehouse due to loss of all the interior wood truss and floor planking. One of the last examples in the Bay Area of this style and type of interior structure would be lost.

This proposed use of the Oriental Warehouse was disapproved by the Landmarks Preservation Advisory Board (LPAB) on November 15, 1989 because it was inconsistent with the Rehabilitation Standards of the Secretary of the Interior. The Oriental Warehouse has survived the 1868, 1906, and 1989 earthquakes. There has been some fire damage to the structure, and it suffered some damage in the 1989 earthquake. It has been determined that the building can be stabilized without demolition and the City has refused the owners request to demolish the building.[4] The Oriental Warehouse was designated a San Francisco landmark in 1977 (Landmark No. 77.6, 101st Landmark), and is both architecturally and historically eligible for listing in the National Register

of Historic Places. The building's detailed main loading portals and the molded pediment give it architectural merit, and its history as the point of debarkation for Chinese immigrants makes it an important historic monument.

The Pier 42 bulkhead structure located within Site N is determined eligible for inclusion on the National Register of Historic Places.[5] The proposed Plan Amendment does not include any specific proposals for the use of the Pier 42 bulkhead structure. The City Planning Commission has requested that any proposals for reuse of Pier 40 include appropriate restoration and reuse of the Pier 42 bulkhead building.[6]

There also exists an unconfirmed possibility that the remains of one or more Gold Rush hulks may exist within the western portion of Site C. This parcel, while still underwater, was adjacent to the active shipbreaking industry existing at Rincon Point during the early and middle 1850s. There is mention of ships near Rincon Point, but it is unknown whether these ships were removed or buried within the confines of the project site.

The Chinese fishing village, located along the line of First Street between Bryant and Brannan Streets, encompasses one of the most important archaeological discoveries in San Francisco. The village is purported to be the first or second Chinese fishing village established in California.[7]

There would be no impacts on any known cultural resources from the proposed project. There is the possibility, however, that during the course of excavation for the development allowed under the proposed Amended Redevelopment Plan, cultural resources of significance may be encountered.

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1. See Wirth Associates, Potrero 7: Phase I Cultural Resources Overview and Inventory. Report prepared for Pacific Gas and Electric Company, 1979; Kelley, R.E., Archaeological Resources in the Golden Gate National Recreation Area, San Francisco, National Park Service, 1976; and, Olmstead, Roger, Nancy Olmstead, Allen Pastron and Jack Prichett, Yerba Buena Center: Report on Historical Cultural Resources, Report submitted to the San Francisco Redevelopment Agency, 1979.

2. Allen G. Pastron, Rincon Point South Beach: Report on Historical Cultural Resources, Archeo-Tec, for San Francisco Redevelopment Agency, May 1985.

3. Information concerning the South End Historic District was taken from A Proposal for a South End Historic District, prepared for the Landmarks Preservation Advisory Board, July 17, 1989, by Paul Lord, Jr.

4. The Foundation for San Francisco's Architectural Heritage Newsletter, Volume XVll, Number 4, Fall 1989, page 1.

5. National Register of Historic Places, Annual Listing of Historic Properties Listed as Eligible for Listing In National Register, 1988.

6. City Planning Commission Resolution No. 11894, March 15, 1990.

7. Dr. Allen G. Pastron, Ph.D, President of Archaeo-Tec: Redevelopment Agency: Rincon Point/South Beach, Report on Historic Resources.

J. SHADOWS

The following is new information to be added to the 1980 Final EIR.

Existing structures cast shadows on streets and sidewalks and open spaces in the vicinity of the sites proposed for use designation change in the Plan Amendment. Two major areas of open space are proposed for the project area, Site C-2 and Site M.

The buildings on the blocks west of The Embarcadero, between Steuart and Spear Streets, have height limits under 240 feet. An exception is Assessor's Block 3741 containing the Rincon Annex and the Rincon Annex Towers. The Rincon Annex is 80 feet high while the Rincon Annex Towers extend to a height of 264 feet. The buildings between the Rincon Annex and The Embarcadero are within an 80 foot height limit. In the South Beach sub-area Assessor's Block numbers 3790, 3791, and 3792 have height limits not to exceed 40 feet, while block 3789, at the corner of First and Townsend Streets has a height limit of 105 feet stepped down to 40 feet on the waterside.

Some of these buildings would cast shadows on the two open space areas in the proposed redevelopment project (Sites C-2 and M). The open space on Site C-2 would have more shadows cast on it than the open space located on Site M, across the Embarcadero from the South Beach Marina, due to the difference in height limits and the current number of buildings occupying areas in the vicinity of the proposed project. The park area on Site C-2 would not be affected by the increase in height limit on Sites I-1 and I-3. Shadow impacts on Site C-2 would be greatest during December from noon until sundown, with up to about 25% coverage. Also during March and September, additional shadow would occur between 2 p.m. and 5 p.m., to a lesser extent.

The proposed height limit increase on Sites I-1 and I-3 from 105 feet to 160 feet would allow a structure to be built on the site that would increase shadow effects. Throughout the year during the early afternoon, there would be an increase in shadows on the residential development on Sites E and J. Shadows would lengthen on The Embarcadero in the late afternoon and early evening in the summer months. A small portion (100 sq. ft. or less) of the northeast corner of the Site M open space may be shaded by a building built to the new 160-foot height limit late in the afternoon for about one week around June 21. This shadow would be adjacent to The Embarcadero

at the point where it is proposed to turn west onto King Street. Shadow from a 40-foot building constructed on Site K would subsume any shadow from Sites I-1 and I-3 and would add considerably more shadow to the Site M park. Therefore, any shadow on open space from Sites I-1 or I-3 would not be considered significant. During late June and July late afternoon and early evening shadows from Sites I-1 and I-3 could affect a small portion of the proposed public piazza on Pier 40.

In June 1984, the voters of the City and County of San Francisco approved Proposition K, the Park Shadow Ban initiative ordinance prohibiting the issuance of building permits for structures that would shade property under the jurisdiction of the Recreation and Park Commission. As none of the planned open spaces would be under the jurisdiction of the Recreation and Park Commission, no development in the area would come under the provisions of Proposition K. The project area is outside of the Downtown Plan area; consequently, the project site does not come under the sunlight provisions of the Downtown Plan. However, the Redevelopment Agency would require developers to conduct shadow analyses to determine the impacts of specific building designs.

K. GROWTH INDUCEMENT

The following information supplements the Growth Inducement Section on page 125 of the 1980 Final EIR.

Development allowed under the proposed Amended Plan would accommodate growth of business activity/employment and housing/population in the Rincon Point-South Beach Redevelopment Area. It would add about 488,000 gsf of net new office space, up to 177,000 gsf of retail space, 67,500 gsf of commercial space, 32,000 gsf of marine-support space and up to 1,290 housing units.

Employment within the Redevelopment Area would increase by about 2,050 people to total 3,640 employees. Occupants of the proposed buildings are not known, but could include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. The increase in employment within the Redevelopment Area, therefore, would not necessarily represent employment that is new to San Francisco. If the space were fully leased, however, and the office space of the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would increase by about 2,050 jobs due to development allowed under the proposed Redevelopment Plan Amendment. Additional jobs also would be supported indirectly in San Francisco through the multiplier effect.[1]

If marketed successfully, office space allowed under the proposed Plan Amendment, together with other planned office development, could have growth-inducing effects by demonstrating a market for office space in this area. This could thereby encourage similar developments outside of the Redevelopment Area, especially in the blocks between the subareas, on lots (including smaller lots assembled for development) currently occupied by low-rise or mid-rise buildings containing support services. The demand for office space reflects the trend of growth in service sector and headquarters office activities and employment in San Francisco. Increases in downtown office space and employment would contribute to continued growth of local and regional markets for housing, goods, and services.

It is expected that some people who would work in new space in the area would want to live in San Francisco. Employment growth, however, would not be reflected directly to increases in

demand for housing and city services to residents, as some new jobs would be held by individuals who already live and work in the City; who prefer to live in the City but previously either did not work, or worked outside of the City; who prefer to live in surrounding communities; or by those unable to afford or locate housing in the City. New workers would also increase the demand for housing in other parts of the Bay Area.

Any net increases in employment downtown would increase the demand for retail goods and services in the area. Development allowed under the Amended Redevelopment Plan would intensify this demand by increasing the amount of employment in the Area.

Increases in employment in the Redevelopment Area would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. Business service firms with expanded markets would increase demand for existing space and possibly for further new development.

As noted above, the Amended Redevelopment Plan would allow for the development of up to 1,290 housing units. Similar to office space, if marketed successfully, housing allowed under the Plan together with other planned development, could have growth-inducing effects by demonstrating a market for housing in this area. This could encourage similar developments on lots currently occupied by industrial or warehousing uses. Some gentrification has already occurred within and surrounding the Redevelopment Area, particularly in the South Park neighborhood. Development allowed under the Amended Redevelopment Plan would continue this trend.

Over the longer term, beyond 2000, there could be cumulative changes in land use patterns in the greater downtown area associated with buildout of the Redevelopment Area, the Rincon Hill Plan area, the South of Market area, and Mission Bay. As residential population in these areas increases, demand for associated commercial services such as retail and restaurants that could not be supplied by existing or planned uses, would increase.

Development allowed under the proposed Amended Redevelopment Plan, in conjunction with other projects in the project vicinity, would continue the trends of the loss of industrial and blue-

collar jobs and the escalation of rents in the South of Market area that have been documented by the Department of City Planning.[2]

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1. Indirect employment projections are based on A 1980 Hybrid Input-Output Model for the San Francisco Bay Region, Association of Bay Area Governments, April 1984. The multipliers used are averages of the employment multipliers contained in that model.

2. Dean Macris, Director of Planning, "Memorandum: South of Market Interim Controls," January 26, 1982.

V. MITIGATION MEASURES

A number of mitigation measures have been identified that would reduce or eliminate the potential adverse environmental effects of the proposed project. The following list represents all of the mitigation measures applicable to the proposed plan, as amended. This list supplements the mitigation measures outlined in the 1980 EIR, beginning on p. 127. Mitigation measures that remain unchanged from the 1980 EIR are marked with an asterisk (*).

A. LAND USE

* The Redevelopment Agency would require the developer of the Pier 40 commercial space to design the structure to shield occupants from noise generated by The Embarcadero roadway to the maximum extent possible.

* The final Project design would provide physical separation of the proposed residential uses in Block 3793 of the Rincon Point subarea from the traffic on King Street.

* The Chief of Architecture of the Redevelopment Agency and the Director of City Planning would review specific Project design before recommending permit approvals to assure that the quality of design and the visual effects of the Project conform with pertinent policies and plans.

B. POPULATION, HOUSING AND EMPLOYMENT

* As required by the 1970 Uniform Relocation Act, the staff of the Redevelopment Agency would provide full allowable relocation assistance and benefits to all businesses (and residents, if applicable) that would be displaced from the Project area. The range of services would vary according to the needs of the business being displaced and would include assistance in processing relocation claims, assistance in the location of a suitable

replacement site, assistance in obtaining financial needs through private lending sources, and provision of other general information to assist the business in making an informed decision relating to the move.

* The Redevelopment Agency would notify businesses in the Project area that additional relocation and loan advisory assistance are available through the Mayor's Office of Economic Development, the Small Business Administration, the Economic Development Administration, Chambers of Commerce, and various trade associations, lending institutions and real estate agencies.

* The local offices of the Small Business Administration would be informed of the Project and requested to work with the Redevelopment Agency and any eligible site occupants in extending their assistance.

C. TRANSPORTATION

There are several transportation mitigation measures summarized in the following section for the four sites as part of the proposed Redevelopment Plan Amendment.

MEASURES UNDER CONSIDERATION

Because Site N is adjacent to The Embarcadero, driveway access would be coordinated with The Embarcadero Roadway design.

The Redevelopment Agency would require that driveway access to Site D would be on Beale Street, approximately 50 to 100 feet from Bryant Street.

The Redevelopment Agency would require that driveway access to Site C would not be on Folsom Street (use Spear or Steuart Streets) and driveway access to Site I would be on First Street.

The Redevelopment Agency would design pedestrian pathways to The Embarcadero from Site N that would be directed toward The Embarcadero/Townsend Street crosswalks to

avoid potential for mid-block jaywalking and/or establish a crossing where no signal control can be provided for safe crossing of The Embarcadero.

The Redevelopment Agency would require development of Site N to be coordinated with the Embarcadero Roadway Project to provide consistency in fronting sidewalk, transit stop and driveway access design. Key elements include provision of right-turning lanes, sidewalk widths and materials, bus stop access and front door pedestrian access consistent with signalized intersections. Also, driveway access for Site N should be at The Embarcadero/Townsend Street. If development of Site N precedes The Embarcadero Roadway Project, Site N access should be limited to right turn in/right turn out.

The Redevelopment Agency would require parking garage exiting controls at the end of ramps. The ramps can be used for off-street stacking. The Redevelopment Agency would consider the inclusion of warning devices (lighted signs and noise-emitting devices) in the parking driveway to alert pedestrians to vehicles exiting the structure. The Agency would make a decision on this measure during final design stage based on design criteria and cost.

The Redevelopment Agency would require loading access located off Spear or Steuart Streets for Site C, Beale Street for Site D, Second Street for Site I and coordinated with the Townsend Street intersection off The Embarcadero for Site N.

The Redevelopment Agency would preclude any lane closures necessary during construction from occurring on the following streets: Site C - Folsom Street; Site D - Bryant Street; Site I - Brannan Street; and Site N - The Embarcadero/King Street.

The Redevelopment Agency would work with the Department of Public Works to determine legislated width of sidewalks adjacent to project sites.

The Redevelopment Agency would work with the San Francisco Parking Authority in undertaking studies of the feasibility of constructing an intercept commuter parking facility in a location appropriate for such facility to meet the unmet demand for parking at Site C for those trips generated by the project which cannot reasonably be made by transit, and

would participate with other project sponsors and/or the Municipal Railway (MUNI) in studies of the feasibility of the establishment of a shuttle system serving the project site and the parking facility.

The Redevelopment Agency would design the placement of paving, landscaping or structures in the sidewalk area (subject to City approval) in such a way as to minimize interference with pedestrian traffic.

The Redevelopment Agency would require compliance with Section 163 of the City Planning Code regarding parking requirements and Transportation System Management (TSM) programs. The Redevelopment Agency would require that on Site C, a member of the building management staff would be designated as a transportation broker to coordinate measures that are part of a transportation management program, such as: general commute option marketing and incentives; encouraging a flexible time system for employee working hours to reduce peak-period congestion by a planned spreading of employee arrivals and departures; encouraging transit use through the on-site sale of BART, MUNI and other carriers' passes to employees; encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for carpool and vanpool information; and conducting periodic surveys of building tenants and employees to monitor progress and evaluate program effectiveness. The transportation management program and responsibilities of the provider of the transportation brokerage services would be detailed between the owner and Redevelopment Agency. The owner would include in all leases for office space a provision requiring tenant employers to cooperate in, and assist in, carrying out the transportation management program.

The Redevelopment Agency would require that during the construction period, construction truck movement would be permitted only between 9:00 A.M. and 3:30 P.M. to minimize peak-hour traffic conflicts and to accommodate queuing of MUNI buses prior to the peak hours. The Redevelopment Agency and construction contractor would meet with the Department of Parking and Traffic, the Bureau of Engineering of the Department of Public Works, the Port Authority, the Fire Department, MUNI and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic

impacts due to lane closures during construction, the Redevelopment Agency would coordinate with construction contractors for any concurrent nearby projects that are planned for construction or which later became known.

The Redevelopment Agency would require the provision of secure, safe bicycle storage facilities relative to the demand generated by project commuters and short-term visitors.

The Redevelopment Agency would require the designation of off-street parking spaces for resident handicapped parking on Site D.

The Redevelopment Agency would require the control of off-street parking spaces to assure priority for vehicles driven by residents on all sites with housing units, the physically handicapped, vehicles using spaces for short-term, rather than all-day parking, and vanpool and carpool vehicles. All remaining parking spaces would be subject to rates that encourage short-term use of said spaces and discourage all-day parking. The parking rate would be reviewed and approved by the Department of City Planning, or alternatively, the Redevelopment Agency would agree to be bound by a formula, to be developed by the Department of City Planning, which structures rates so as to favor short-term parking.

The Redevelopment Agency would require the placement of building directories and signs for the service elevators in the loading area.

When the proposed office building on Site C is 80% occupied, the Redevelopment Agency would require that a survey be conducted, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for carpools and vanpools. The Agency would make this survey available to the Department of City Planning. This measure would provide needed information to aid in transportation planning in the City.

MEASURES THAT COULD BE IMPLEMENTED BY OTHER PUBLIC AGENCIES

* Pacific Gas & Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-

peak hours. This should be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption.

In conjunction with The Embarcadero Surface Roadway Project, the city should consider adding a southbound right turn lane on The Embarcadero at Brannan Street. This would improve this intersection's year 2000 level of service from "D" (0.80) to "C" (0.70).

The City could act to implement the transportation mitigations described in Vol. 1, Section V.E., Mitigation, pp. V.E.4-28, in the Downtown Plan EIR; and in the Mission Bay EIR Vol. II, Section VI.E., Mitigation, pp. VI.E.214-VI.E.217 for the year 2000 and VI.E.224-VI.E.231 for 2020, and in the South of Market EIR, pp. 189-194. The measures for the year 2000 are similar or identical to those in the Downtown Plan and include, in summary: measures to construct and maintain rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; measures to fund Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; provide exclusive transit lanes on City streets and on freeways; reduce incentives to drive by reducing automobile capacities or bridges and highways in certain circumstances and by discouraging long-term parking; measures to encourage carpools, vanpools and bicycle use; and measures to improve pedestrian circulation within downtown San Francisco.

Many of the measures have been implemented since the Downtown Plan EIR was certified, such as BART's Oakland WYE track, expansion of the Sutter/Stockton parking garage, requiring transportation brokers in major new downtown building, and designation of Rincon Hill as a high density housing area near downtown in the Rincon Hill Plan. Others are under study and a few have changed. Studies are continuing of the CalTrain extension to downtown, extensions of BART in the East Bay and to San Francisco International Airport, the building of a new MUNI Metro Turnaround at the foot of Market Street (the Final EIS was published by UMTA in August, 1989), and construction of HOV lanes on I-80 near the Bay Bridge. The majority of these measures are relevant on an area-wide, city-wide or regional basis.

The South of Market EIR includes additional measures related to South of Market, such as providing transportation brokerage services for new South of Market projects, as well as relevant measures for cumulative impacts similar to those in the Downtown Plan EIR.

Three types of mitigation measures related to cumulative impacts are described in the Mission Bay EIR transportation system capacity improvements which are reasonably sure to happen by 2000 and are assumed in the impacts analysis; measures to mitigate regional impacts by 2000; and measures to mitigate regional impacts by 2020. (See Mission Bay EIR, Vol. II, pp. VI.E. 198-231).

Measures are suggested in the Mission Bay EIR that might mitigate the impacts of regional growth in 2020. Those measures include expanding transbay transportation capacity to the East Bay by constructing a new bridge between Alameda and San Mateo Counties (now under study), widening the San Francisco-Oakland Bay Bridge or Hayward-San Mateo Bridge, or providing a new transbay tunnel or an enhanced train-control computer system for BART; expanded transbay capacity to the North Bay through provision of bus lanes or light-rail service on a second deck of the Golden Gate Bridge; and expanded transit opportunities to the South Bay via a CalTrain extension to downtown San Francisco or BART and MUNI extensions to the Peninsula. These measures are not intended to suggest the exclusive means of solving transportation problems but provide examples of the regional nature of the solutions.

Some of the implementing actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by other City agencies, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. All except such things as providing transportation brokers would require funding from or approval by MTC. These measures are system-wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project, it is not appropriate to impose mitigation at system-wide levels on individual projects. Other possible transportation solutions will arise and will continue to be investigated by the regional agencies as long as regional transportation is a high priority in the area.

D. SOILS AND SEISMICITY

MEASURE PROPOSED TO BE INCLUDED IN THE PROJECT

Detailed foundation and structural design studies would be conducted by a California-licensed structural engineer and a geotechnical consultant to address foundation and anti-seismic design. The Redevelopment Agency would require the site developer(s) and contractor(s) to follow the recommendations of these studies during the final design, excavation and construction of the project sites.

Each site in the project area would require its own soils report. The final soils reports would address the potential settlement and subsidence impacts of dewatering. Based upon this discussion, the soils reports would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project site developer(s) to perform this monitoring. Groundwater observation wells would be installed to monitor potential settlement and subsidence. If, in the judgement of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge would be used to halt this settlement. The project site developer(s) would delay construction if necessary. Costs for the survey and any necessary repairs to service under the street would be borne by the project site developer(s).

The Redevelopment Agency would require that during excavation, shoring and bracing should be used to reduce soil movements beneath nearby structures and adjacent streets. The excavation would be kept dry by sump pumping rather than through the use of dewatering wells. This would prevent consolidation of soils supporting adjacent streets and nearby structures and would avoid exposing any nearby wooden foundations to dry rot.

Adjacent structures might need to be underpinned, should excavation go below the level of the base of their foundations, to avoid such damage as cracking of walls or foundations

or sagging of floors. If appropriate, a preconstruction survey of adjacent buildings and streets would be made to establish existing elevations.

To avoid building settlement and potential seismic hazards encountered when building on Bay mud, deep foundation system (such as precast concrete piles driven to dense sands below the Bay mud to support the structure) would be required by the Bureau of Building Inspection where soils reports indicated their necessity. A preconstruction survey would be needed to establish the potential effect of vibration from pile driving. A vibration monitoring program would be maintained throughout the pile driving phase of construction.

E. DRAINAGE AND WATER QUALITY

* The Redevelopment Agency would require the project site developer(s) to ensure that water leaving the site as runoff or dewatering discharge would be detained in a holding tank (sediment basin) for sufficient time to allow suspended fine, as well as coarse, particles to settle, if this is found necessary by the Industrial Waste Division of the Department of Public Works, in order to reduce the amount of sediment entering the storm drain/sewer lines.

To the extent possible, oil separators or similar filtering systems should be included in the catch basins on-site to reduce the project's contribution to the cumulative contaminant load being carried and treated by the City system. Catch basins would be cleaned and maintained on a schedule at least as frequently and regularly as that used by the Department of Public Works.

Prior to commencement of excavation, the project site developer(s) would determine whether contaminated groundwater occurs at any project site, and whether it would be exposed during project construction. Contaminated groundwater beneath the sites would be cleaned prior to discharge to the City's storm/sewer system.

F. AIR QUALITY

While mitigation measures are proposed only for criteria pollutants identified as potentially exceeding the threshold criteria of significance, as defined in the Guidelines, these

measures would also reduce the level of emissions of pollutants emitted as a result of the proposed project which were estimated to not have a significant impact.

NITROGEN OXIDES

Reduction of emissions of nitrogen oxides below the level of significance would be accomplished by employing mitigation measures described in the mitigation section of the transportation section. The Transportation System Management (TSM) discussed in this section would need to reduce NO_x emissions by approximately 20% to bring NO_x emissions from the proposed project below the level of significance. Reductions in traffic related emissions are roughly proportional to the ratio between the volume of traffic eliminated and all expected project construction activities.[1]

PARTICULATES

Construction-Related

All construction contracts would require watering twice daily with complete site coverage; the frequency of watering should increase if wind speeds exceed 15 mph. Dust emissions related to construction can be reduced approximately 50 percent by watering exposed earth surfaces during excavation, grading and construction activities.[1] Conditions of approval would also require daily cleanup of mud and dust carried onto street surfaces by construction vehicles. Throughout construction activities, haul trucks would use tarpaulins or other effective covers. Upon completion of construction, contractors should take measures to reduce wind erosion. Replanting and repaving would be completed as soon as possible.

To reduce the potential of spot violations of the CO standards and odors from construction equipment exhaust, all construction contracts would require the contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on unnecessary idling of construction equipment including trucks waiting in queues; and specific maintenance programs (to reduce emissions) for equipment that would be in frequent use for much of a construction period.

Implementation of the mitigation measures discussed above should reduce the potential for cumulative air quality impacts from particulate emissions to an insignificant level. In addition to these measures, the construction of other projects in the vicinity of the proposed project could be staggered to eliminate the cumulative impact.

Traffic-Related

Reductions in traffic volumes, discussed in the mitigation measures for nitrogen oxides above, would similarly reduce particulates generated by the proposed project. In addition, a rigorous street cleaning program would help reduce the amount of particulates on the streets which are stirred up by passing motor vehicles. As discussed in the section on Impacts, the source of a large percentage of the particulates is from entrainment of dust on the paved roads by passing motor vehicles, the remaining particulates are emitted by the traffic generated by the proposed project.

G. NOISE

* Under both the San Francisco and State guidelines, noise analysis and noise insulation design would be required for proposed structures. The Redevelopment Agency would require developers to design structures to meet applicable noise criteria. The Agency would also require developers to comply with Title 25 of the California Administrative Code and conduct acoustical analyses for residences within annual exterior 60 dB CNEL (Community Noise Equivalent Level) contours. The Agency would require developers use noise attenuation measures as appropriate in design, including installation of exterior noise barriers such as masonry walls or landscaped berms; noise insulation within walls of structures; and design and placement of residential structures so that they are shielded from major noise sources by non-residential structures.

The proposed office use on Site C, the proposed housing on Site D and the proposed commercial uses at Pier 40 could require sound rated windows and would require mechanical ventilation to allow the windows to remain closed. The actual selection of the glazing and wall constructions would be done at the project design stage.

H. TOXIC AND HAZARDOUS MATERIALS

MEASURES PROPOSED TO BE INCLUDED IN THE PROJECT

Separate site remediation plans would be developed for individual sites within the Redevelopment Area, including Site K, to deal specifically with contaminants of concern detected during site sampling, in accordance with applicable State and federal guidelines for site cleanup. The primary objectives of site remediation would be to eliminate existing public health hazards and to minimize the potential for future risks to public health and safety. These objectives would be achieved by preventing human contact with contaminated air, soil, or groundwater and by preventing migration of hazardous materials in air, soil, or groundwater. A secondary objective would be to minimize potential adverse effects on the environment, such as pollution of the Bay.

On the basis of federal and State guidelines, five categories of alternatives are to be considered in developing remedial activities.[2] These are:

1. Alternatives for treatment or disposal at an off-site facility;
2. Alternatives that attain applicable or relevant and appropriate public health and environmental requirements;
3. Alternatives that exceed such requirements;
4. Alternatives that do not attain requirements but would provide significant protection for public health and the environment;
5. No-action alternative.

Alternative cleanup measures might include soil removal, on-site containment, and on-site treatment (stabilization, extraction, incineration, or similar methods). For groundwater clean-up, measures might include groundwater pumping (dewatering), air stripping, extraction, and filtration. BAAQMD permitting would be required for operations where a stationary source of air contaminants would exist, such as air stripping, soil vapor extraction or incineration.

The following safety measures would be implemented at cleanup sites to protect workers on the cleanup sites and other individuals living and working near the clean-up sites from hazardous airborne dust and toxic gases that could be released:

- Direct contact with hazardous soils or liquids by on-site workers would be prevented with the proper selection of safety clothing and equipment. The level of safety equipment required would be determined on a site-by-site basis. The level of safety equipment required (i.e., A,B,C) would be specified by site clean-up plans. Different safety levels could require disposable clothing, safety boots, safety gloves and respirators. This mitigation would protect on-site workers.

- A dust control program would be implemented if the dust from a site would otherwise be hazardous to on-site workers or nearby residents. The specific site clean-up techniques would determine the dust control measures to be implemented in a particular dust control program. The dust control program would require both routine and random oversight by an industrial hygienist. The industrial hygienist would make measurements, if necessary, to determine that resultant exposure levels to dusts are within appropriate standards. This mitigation would protect both on-site workers and off-site individuals.

- A safety buffer zone would be created around the clean-up site if an on-site clean-up involves activities that present the risk of a toxic gas release. The size of the safety buffer zone must be large enough so that the immediate release of gases would not put off-site individuals in danger. This mitigation would protect off-site individuals.

- An evacuation plan would be developed before drilling or excavation in dangerous areas. This plan would require that safety actions (including evacuation) be taken if a gas release was of a long-term nature, or larger than expected. This mitigation would protect off-site individuals.

- On-site cleanup crews would be required to monitor odors and fumes with appropriate explosive gas detectors or organic vapor analyzers. This mitigation would protect both on-site workers and off-site individuals.

I. HISTORIC AND ARCHAEOLOGICAL RESOURCES

Rehabilitation of the Oriental Warehouse, including preservation of an example of the trusses, would partially mitigate the potential impacts of the project on the building.

The sponsor would retain the services of an archaeologist. The Environmental Review Office (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB), the Director of the Redevelopment Agency and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on

the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

Given the strong possibility of encountering the remains of cultural or historic artifacts within the project site, prior to the commencement of foundation excavations, the Redevelopment Agency would require the site developer(s) to undertake a program of archaeological testing. This would consist of the placement of a series of mechanical, exploratory borings or of other similar on-site testing methods. The archaeologist would supervise the testing at the site to determine the probability of finding cultural and historical remains. At the completion of the archaeological testing program, the archaeologist would submit three copies of a written report, first and directly to the ERO, with a copy to the agency and one to the site developer, which describes the findings, assesses their significance and proposes appropriate recommendations for any additional procedures necessary for the mitigation of adverse impacts to cultural resources determined to be significant.

An historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO and the Agency would also require cooperation of the project developer in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO, the Director of the Redevelopment Agency and the President of the LPAB. Upon receiving the advice of the consultants and the LPAB, the ERO and the Director of the Redevelopment Agency would jointly recommend specific mitigation measures, if necessary. Excavation or construction activities following the preconstruction archaeological testing program, that might damage the discovered cultural resources, would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation or construction) to permit inspection, recommendation and retrieval, if appropriate.

Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO, the Director of the Redevelopment Agency and the President of the LPAB would be placed in an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

J. COMMUNITY SERVICES

The Redevelopment Agency would require Project developers to incorporate the following measures into their development proposals, as appropriate:

FIRE

* Meet with the Fire Department to obtain specific fire safety and prevention measures for incorporation into specific design plans.

WATER SERVICE

* Install native, drought-resistant vegetation in all park and landscaping areas to reduce watering requirements.

SOLID WASTE

* Provide storage space for recyclable materials in all housing and office buildings to encourage recycling activities.

* Include trash compaction facilities in the design of office and commercial buildings.

PARKS AND RECREATION

* Coordinate with the Bureau of Traffic Engineering to provide traffic signalization and other safety features along routes from residential areas to park areas, where feasible, to allow safe access by children.

* Separate housing by fencing or other barriers from open major roadways, such as The Embarcadero.

K. SHADOWS AND WIND

The Redevelopment Agency would require developers to conduct shadow analyses and wind studies as needed to determine the impacts of specific building designs, and adhere to recommended mitigation measures which result.

L. RESOURCE USE

The Redevelopment Agency would develop criteria for use in the design of each development to minimize the avoidable, unnecessary and/or wasteful use of nonrenewable energy and to encourage the use of renewable energy. The Agency would review each building design to ensure that it would conform to all criteria.

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1. U.S. Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, AP-42, Third Edition, 1985, p. 11.2.4-1.

2. U.S. Code of Federal Regulations, Title 40, Chapter 1, Part 300, "Natural Oil and Hazardous Substances Pollution Contingency Plan, 300.68, July 1, 1989 edition.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

This Chapter is subject to final determination by the City Planning Commission and the Redevelopment Agency Commission as part of their certification process for the EIR. Chapter VI of the Final EIR will be revised, if necessary, to reflect the findings of both Commissions.

This Chapter identifies significant impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the project, as described in Chapter V, Mitigation Measures.

The following is a list of significant impact that would result in addition to those listed on pages 133 and 134 of the 1980 Rincon Point-South Beach Redevelopment Plan Final EIR.

TRANSPORTATION

Cumulative development in downtown San Francisco would have a significant effect on the environment in that it would generate cumulative traffic increases as well as cumulative passenger loadings on Muni, BART and other regional transit carriers.

AIR QUALITY

These cumulative traffic impacts could cause violations to particulate standards in San Francisco with concomitant health effects and reduced visibility. Cumulative traffic growth also would contribute to regional air quality problems. Buildout of the proposed Plan Amendment would contribute to these cumulative effects.

TOXIC AND HAZARDOUS MATERIALS

A potential hazard exists to all involved parties from hazardous substances that might be overlooked during site survey and clean-up activities. Any overlooked materials might persist in the Redevelopment Area and pose a continuing, long-term hazard to construction workers, occupants, visitors, or wildlife in future years. For example, if any tanks or corrosive, reactive, or ignitable chemicals were not removed from the Redevelopment Area, the risk of accidental breaching or eventual leakage of their contents would be a risk not only to clean-up crews and construction workers, but to residents as well.

The following replaces the existing text under Business Relocation on p. 133 of the 1980 Final EIR:

> Although the Redevelopment Agency would provide full allowable relocation benefits and assistance to eligible businesses that would be displaced from the Redevelopment Area, some firms could still be expected to go out of business or relocate outside of San Francisco.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

ALTERNATIVE A: NO DEVELOPMENT

Under this alternative, the Redevelopment Plan Amendment would limit development to that which now exists or has been fully approved. There would be no change in existing land uses within the Rincon Point-South Beach Redevelopment Area. No further redevelopment of the Area would occur; existing conditions would remain. Table 15 below compares the land uses at full buildout (2000) of the proposed Amended Plan and Alternative A. Cumulative impacts outside of the Redevelopment Area would take place, as described in the Land Use, Population, Housing and Employment, Transportation, Noise, and Air Quality impact sections of this EIR, but the Redevelopment Area would not contribute to them.

Table 16, page 175 shows the projected capacity and level of service conditions of the 16 study intersections under the proposed Plan Amendment, Alternative A, and Alternative B. Alternative A would result in a level of service improvement at five of the twelve signalized intersections, and at the minor movement of one unsignalized intersection.

ALTERNATIVE B: NO CHANGE TO 1980 REDEVELOPMENT PLAN

Under this alternative, there would be no amendment to the 1980 Rincon Point-South Beach Redevelopment Plan. The four sites affected by the proposed project would retain their existing land use designations and height limits; these and all undeveloped sites would be developed according to their land use designation in the adopted Plan. Alternative uses would not be combined on the same development site. Cumulative growth from outside the Redevelopment Area would still occur, and development from the area would contribute, but in ways different from the proposed project.

TABLE 15

LAND USES AT BUILDOUT (2000)
OF PROPOSED PLAN AMENDMENT AND ALTERNATIVE A

Use	Proposed Plan Amendment	Alternative A No Development	Difference
Housing (Units)	2,890 - 3,010	1,720	-1,170 - 1,290
Office (GSF)	848,000	360,000	-488,000
Retail/Restaurant/Service (GSF)	657,000 - 814,500	570,000	87,000 - 244,500
Industrial (GSF)	0	530,000	530,000
Marine Support (GSF)	33,000	1,000	-32,000
Public Parks (GSF)	510,000	0	-510,000

Source: EIP Associates

TABLE 16

PROJECTED LEVELS OF SERVICES
ALTERNATIVES A AND B, AND PROPOSED PLAN AMENDMENT

	SCENARIO					
	Alternative A Cumulative 2000 Without Further Development[2]		Alternative B with Cumulative 2000[2]		Proposed Plan Amendment with Cumulative 2000[2]	
Current/Future Signalized Intersections[1]	(V/C)	LOS	(V/C)	LOS	(V/C)	LOS
1. Broadway/The Embarcadero	0.74	C	0.79	C	0.81	D
2. Howard Street/The Embarcadero	0.71	C	0.76	C	0.74	C
3. Harrison Street/The Embarcadero	0.58	A	0.59	A	0.61	B
4. Folsom Street/The Embarcadero	0.57	A	0.61	B	0.66	B
5. Bryant Street/The Embarcadero	0.59	A	0.60	B	0.63	B
6. Brannan Street/The Embarcadero	0.76	C	0.77	C	0.80	D
7. Townsend Street/The Embarcadero	0.70	C	0.70	C	0.74	C
8. Second Street/Bryant Street	0.59	A	0.59	A	0.59	A
9. Second Street/Brannan Street	0.64	B	0.68	B	0.69	B
10. Second Street/Townsend Street	0.54	A	0.55	A	0.56	A
11. Second Street/King Street	0.36	A	0.37	A	0.38	A
12. Third Street/King Street	0.57	A	0.58	A	0.59	A
Unsignalized Intersections[3]						
13. Bryant Street/Beale Street		C or better		C or better		C or better
14. Brannan Street/First Street		A/B		A/C		A/C
15. Folsom Street/Spear Street		A/A		A/A		A/A
16. Spear Street/Howard Street		C or better		C or better		C or better

[1] Assumes unsignalized intersections along The Embarcadero would be signalized after completion of The Embarcadero Surface Roadway Project. Some intersections would have turn lanes added.
[2] Includes turn lane improvements that are part if The Embarcadero Surface Roadway Project.
[3] Levels of service for 2-way stop unsignalized intersections show the major movement (first street name) level of service and the minor movement (second street name) level of service; 4-way stop unsignalized intersections were measured against level of service "C" service volumes shown in Table 10.7 of the 1985 Highway Capacity Manual.

* Source: DKS Associates

Table 17 below compares the land use designations of development sites that differ between the proposed Amended Plan and Alternative B, and compares the land uses at full buildout (2000) of each. If Site C-1 were developed for hotel, residential, and retail use, Alternative B would result in a decrease of about 180 to 420 housing units and about 500,000 gsf of office space, compared to the proposed Amended Plan. Alternative B would result in an increase of about 800 hotel rooms; about 85,500-153,000 gsf of retail/service space; and an increase of about 34,500 gsf of marine-support space.

Under this alternative, there would be no retail commercial uses unrelated to marine activities. Instead, the Pier would be used entirely for marine support activities; a full range of services related to recreational boating would be provided, including such uses as boat building and repair facilities, dry dock storage, sail making, boat sales and rentals, and a ship chandlery. Some of these services would exist on Pier 40 under the Amended Plan; however, approximately half the space would be devoted to this use. A public piazza would not be provided on Pier 40 under Alternative B; it is assumed that this area would be used for additional parking.

Under this alternative, the Oriental Warehouse would be historically restored, and would contain a combination of uses such as retail commercial, day-care, recreation, and service facilities. As in the proposed Plan Amendment, the tilt-up warehouse north of the Oriental Warehouse would be removed; however, under Alternative B, a portion of this area would be left open as a public plaza and setting for the Oriental Warehouse. About 130 additional units of housing would be built on Site I, compared to 422 under the proposed Plan Amendment.

Alternative B would not specifically designate any parcel for Senior Citizen housing; however, this use would not be precluded from any of the Sites designated for housing. On Site D, about 12,000 gsf of commercial retail space would be built under Alternative B.

Alternative B calls for Site C-1 to be developed with an 800 room hotel complex, about 130 housing units, and 65,000 gsf of retail uses; the proposed Plan Amendment calls for this site to be developed with about 500,000 gsf of office space. Alternative B designates housing as an alternate use on Site C-1. This site could accommodate about 370 housing units. If this alternate use were chosen under Alternative B, there would be no hotel use in the Redevelopment Area, and the total amount of retail area would be reduced by about 60,000 gsf.

TABLE 17

LAND USES AT BUILDOUT (2000)
OF PROPOSED PLAN AMENDMENT AND ALTERNATIVE B

Use	Proposed Plan Amendment	Alternative B 1980 Plan	Difference
Housing (Units)	2,890-3,010	2,590-2,710	-180-420
Hotel[1] (Rooms)	0	800	800
Office (gsf)	848,000	348,000	-500,000
Retail/Restaurant/ Service (gsf)	657,000-814,500	810,000-900,000	+85,500-153,000
Industrial (gsf)	0	0	0
Marine Support (gsf)	33,000	67,500	+ 34,500
Public Parks (gsf)	510,000	510,000	0

[1] Assumes development of Site C-1 with hotel use in Alternative B; does not account for housing as an alternative use of Site C-1 under Alternative B.

Source: DKS Associates

Alternative B would result in an increase of about 590 hotel employees, about 345-535 retail/service employees (including marine-support commercial employees), and a decrease of about 1,865 office employee, for a net decrease of about 740-930 employees within the Redevelopment Area as compared to the four changed sites. The same number of existing firms and employees would be relocated under Alternative B.

A trip generation comparison of the of the four changed sites being considered under the proposed Amended Plan and Alternative B is shown in Table 18, page 179. Alternative B would generate more daily and P.M. peak hour person trips (35,545 daily/3,420 peak hour) than the four changed sites (30,374 daily/3,068 peak hour), but fewer auto driver vehicle trips (466 for the Alternative B versus 671 for the four changed sites). This is due to the pedestrian orientation of the retail and commercial land uses. Table 19, page 180 compares the number of vehicle and transit trips that would be generated under both plans, while Table 20, page 181 compares pedestrian trips. Alternative B would generate fewer transit trips (518 versus 811 for the four changed sites), and more pedestrian trips (2,118 versus 1,376 for the four changed sites).

Traffic conditions at the study area intersections would be very similar under both Alternative B and the four changed sites under the proposed Plan Amendment. Levels of service would be increased one level at four intersections by comparing Alternative B to the Plan Amendment:

- Broadway/The Embarcadero, from "D" (0.81) to "C" (0.79)
- Harrison Street/The Embarcadero, from "B" (0.61) to "A" (0.59)
- Brannan Street/The Embarcadero, from "D" (0.80) to "C" (0.77)

Alternative B would generate almost 300 fewer transit trips in the P.M. peak hour than the four changed sites (see Table 19). The biggest difference is caused by land use differences on Site C and Site N. The office use proposed for Site C would generate over 120 additional P.M. peak hour transit trips compared to Alternative B. Alternative B would generate approximately 740 more P.M. peak hour pedestrian trips than the four changed sites due to the increase in commercial space on Site I (see Table 20).

TABLE 18

TRIP GENERATION COMPARISON
PROPOSED PLAN AMENDMENT AND ALTERNATIVE B

	Proposed Plan Amendment	Alternative B	Difference
Daily Person Trips	30,374	35,545	5,171
P.M. Peak Period Person Trips	5,559	6,704	1,145
P.M. Peak Hour Person Trips	3,068	3,420	352
P.M. Peak Hour Auto Driver Vehicle Trips	671	466	- 205
P.M. Peak Hour Transit Trips	811	518	-293

Source: DKS Associates

TABLE 19

PROPOSED PLAN AMENDMENT AND ALTERNATIVE B
VEHICLE TRIPS AND TRANSIT PERSON TRIPS
(P.M. PEAK HOUR)

	Proposed Plan Amendment		Alternative B		Difference	
Site	V/T	T/T	V/T	T/T	V/T	T/T
C	484	370	525	248	41	- 122
D	6	6	20	30	14	24
I	177	186	160	234	-17	48
N	170	249	10	6	-160	-243
Total	837	811	715	518	-122	-293

V/T = Vehicle Trips -- Auto Driver + Auto Passenger (Carpool, Vanpool, Taxi, Limo)

T/T = Transit Trips -- MUNI + BART + CalTrain + AC Transit + Golden Gate Transit + SamTrans + Charter Bus

Source: DKS Associates.

TABLE 20

ALTERNATIVE B AND PROPOSED PLAN AMENDMENT
PEDESTRIAN TRIPS (P.M. PEAK HOUR)

Site	Proposed Plan Amendment	Alternative B	Difference in Pedestrian Traffic
C	47	973	926
D	6	129	123
I	241	1,013	772
N	1,082	3	-1,079
Total	1,376	2,118	742

Source: DKS Associates.

While specific parking plans have not been developed for the project or its alternatives at this programmatic stage, Alternative B would generate more parking demand than the proposed Plan Amendment, due to the Plan Amendment's office use designation on Site C.

Geology and Seismicity, Drainage and Water Quality, Toxic and Hazardous Materials, Vegetation and Wildlife, and Shadow impacts of Alternative B would be similar to those identified for the proposed Plan Amendment.

Alternative B would have almost identical impacts as the proposed Plan Amendment for intersection CO concentrations and emittances of other criteria pollutants. All emissions found to have a significant impact for the proposed project similarly would have a significant impact Alternative B. The same mitigation measures discussed for the proposed project would also be recommended for Alternative B.

Noise impacts of Alternative B would be similar to those of the proposed Plan Amendment; however, as Alternative B calls for commercial rather than residential use at Site D, the same noise reduction measures at the Site would not be necessary.

As Alternative B includes the historical renovation of the Oriental Warehouse, this Alternative would have no adverse impact on historic and cultural resources.

Because Alternative B would result in about 740-930 fewer jobs and about 180 to 420 fewer housing units, this Alternative would have less growth inducement impacts.

ALTERNATIVE C: CHANGE IN LAND USE DESIGNATION OF SITES C-1 AND D

Under this Alternative, the land use designation of Sites C-1 and D would be changed to office and senior citizen housing, respectively, as proposed in the Plan Amendment. The land use designations of Sites I and the Pier 40 portion of Site N would not be changed from those of the 1980 Redevelopment Plan. The height limit on Site I would not be increased. The combination of alternative uses on sites with alternative use designations would be allowed under this Alternative, as would the temporary use of undeveloped sites for uses not in conformance with the adopted Redevelopment Plan.

On Site I, the Oriental Warehouse would be historically restored and would contain a combination of uses such as retail commercial, day-care, recreation, and service facilities. The tilt-up warehouse north of the Oriental Warehouse would be removed. About 130 additional housing units would be built on Site I.

Pier 40 would contain no retail commercial uses unrelated to marine activities, and would be used entirely for marine support activities; a full range of services related to recreational boating would be provided, including such uses as boat building and repair facilities, dry dock storage, sail making, boat sales and rentals, and a ship chandlery. This alternative would result in an increase of marine support activities of about 34,500 gsf on Pier 40 compared to the proposed Plan Amendment.

Under Alternative C, Site C-1 would contain about 500,000 gsf of office space, and Site D would contain about 24 units of senior citizen housing, as in the proposed Plan Amendment.

This Alternative would result in a net decrease of about 290 housing units, and an increase of about 14,500 gsf of retail commercial space and about 34,500 gsf of marine support space, as compared to the proposed Plan Amendment.

Compared to the proposed Plan Amendment, Alternative C would result in 193 fewer retail employees and 330 more commercial/marine support employees than the proposed Plan Amendment, for a net increase of 137 employees.

Overall, transportation impacts of Alternative C would be similar to those of Alternative B, and slightly less than those of the proposed Plan Amendment. Compared to Alternative B, Alternative C would result in about 55 fewer P.M. peak hour vehicle trips and about 100 more P.M. peak hour transit trips. Compared to the proposed Plan Amendment, Alternative C would result in about 180 fewer P.M. peak hour vehicle trips and about 200 fewer P.M. peak hour transit trips. The estimated parking shortfall at Site C of about 150 spaces would occur under Alternative C as well as the proposed Plan Amendment.

The Geology and Seismicity, Drainage and Water Quality, Noise, Toxic and Hazardous Materials, Vegetation and Wildlife, and Shadow impacts of Alternative C would be similar to those identified for the proposed Plan Amendment.

As Alternative C includes the historical renovation of the Oriental Warehouse, this Alternative would have no adverse impact on Historic and Cultural Resources.

Alternative C would result in about 290 fewer housing units and about 137 jobs compared to the proposed Plan Amendment; thus, the Growth Inducement Impacts of this Alternative would be slightly less.

VIII. DEIR DISTRIBUTION LIST

FEDERAL AND STATE AGENCIES

State Office of Intergovernmental
Management (10)
State Clearinghouse
1400 10th Street
Sacramento, CA 95814
Attn: Loreen McMahon

Christian Gerike
Northwest Information Center
Calif. Archaeological Inventory
Dept. of Anthropology
Sonoma State University
Rohnert Park, CA 94928

California Department of Transportation
Transportation Planning
P.O. Box 7310
San Francisco, CA 94120
Attn: Gary Adams

California Department of Transportation
Public Transportation Branch
P.O. Box 7310
San Francisco, CA 94120
Attn: William Chastain

REGIONAL AGENCIES

Association of Bay Area Governments
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IX. APPENDICES

APPENDIX A
TRANSPORTATION

TABLE A-1

EXISTING P.M. TRAFFIC VOLUMES[1]

Intersection	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
1. Broadway at The Embarcadero	330	1,270	--	--	1,145	35	105	--	300	--	--	--
2. Harrison Street at The Embarcadero	55	1,085	--	--	1,120	205	40	--	75	--	--	--
3. Folsom Street at The Embarcadero	--	1,075	--	--	1,280	--	195	--	90	--	--	--
4. Howard Street at The Embarcadero	22	1,200	--	--	1,240	275	150	--	70	--	--	--
5. Spear Street at Howard Street	--	--	--	120	160	140	--	100	30	50	275	--
6. Spear Street at Bryant Street at The Embarcadero	70	1,025	--	--	1,300	2	115	--	160	--	--	--
7. Brannan Street at The Embarcadero	35	915	--	--	1,290	260	95	--	230	--	--	--
8. Townsend Street at The Embarcadero	20	860	--	--	1,150	370	90	--	180	--	--	--
9. Second Street at Bryant Street	--	270	470	70	350	--	180	580	85	--	--	--
10. Second Street at Brannan Street	30	370	20	40	260	145	160	170	25	25	460	120
11. Second Street at Townsend Street	25	180	20	10	140	115	150	240	35	25	310	70
12. Second Street at King Street	10	135	--	--	120	80	90	--	95	--	--	--
13. Third Street at King Street	30	1,815	150	--	--	--	95	30	--	--	40	45
14. Beale Street at Bryant Street	3	--	56	235	62	498	--	430	28	34	71	--
15. First Street at Brannan Street	35	30	30	40	25	20	15	230	15	20	260	15
16. Spear Street at Folsom Street	--	--	--	60	185	--	--	340	80	--	--	--

L = Left Turn
T = Through Traffic
R = Right Turn

Sources: DKS Associates, San Francisco Department of City Planning

[1]Volumes represent 1989 conditions, except Beale Street at Bryant Street, which was counted by DKS Associates in 1990.

TABLE A-2

LEVEL OF SERVICE DEFINITIONS
SIGNALIZED INTERSECTIONS

Level of Service	Vehicle Delay (secs.)	Volume to Capacity Ratio	Description
A	≤5.00	0.00-0.60	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.
B	5.1-15.0	0.61-0.70	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles.
C	15.1-25.0	0.71-0.80	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted.
D	25.1-40.0	0.81-0.90	**Approaching Unstable/Tolerable Delays:** Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	40.1-60.0	0.91-1.00	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection.
F	≥60.0	varies	**Forced Flow/Excessive Delays:** Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

Sources: *Highway Capacity Manual, Special Report No. 209,* Transportation Research Board, Washington, D.C., 1985

Transportation Research Circular Number 212, Transportation Research Board, January 1980.

TABLE A-3

TRANSIT LEVELS OF SERVICE

Peak Hour Level of Service	Passengers/Seat	
	Bus	Rail
A	0.00-0.50	0.00-0.65
B	0.51-0.75	0.66-1.00
C	0.76-1.00	1.01-1.50
D	1.01-1.25	1.51-2.00
E-1	N/A	2.01-2.50
E-Bus; E-2-Rail (Maximum Scheduled Load)	1.26-1.50	2.51-3.00
F (Crush Load)	1.51-1.60	3.01-3.80*

*The maximum crush load can be realized in a single rail car, but not in every car on the train.

Source: *1985 Highway Capacity Manual Special Report 209*, Tables 12-5 and 12-6.

TABLE A-4

PEDESTRIAN LEVELS OF SERVICE

Flow Rate (Pedestrians/minute/foot of effective walkway width)	Level of Service
0.0 - 2.0	A (Open)
2.1 - 7.0	B (Unimpeded)
7.1 - 10.0	C (Impeded)
10.1 - 15.0	D (Constrained)
15.1 - 25.0	E (Crowded)
Variable	F (Congested)

Source: *1985 Highway Capacity Manual Special Report 209*, Table 13-3.

TABLE A-5

PARKING DEMAND CALCULATIONS

Site C (500,000 sq. ft. Office)

Long-Term Demand - 225 spaces
500,000/20,000 = 25 rideshare spaces
500,000/275 x 0.11 = 200 drive-alone spaces

Short-Term Demand - 25 spaces
500,000/20,000 = 25 short-term spaces

Total Site Demand: 225 + 25 = 250 spaces

Site D (24 Senior Housing Units)

24 x .65 vehicles/unit x 1.1 visitor demand factor = 18 long-term spaces

Site I (422 Residential Dwelling Units; 12,500 sq. ft. Retail)

Retail Long-Term Demand
12,500/350 x 0.15 = 5 drive-alone spaces

Retail Short-Term Demand
12,500/1,000 = 13 short-term spaces

Residential Demand
422 x .65 vehicles per unit x 1.1 visitor demand factor = 302 long-term spaces

Total Site Demand: 5 + 13 + 302 = 320 spaces

Site N (100,500 sq. ft. Retail)

Retail Long-Term Demand
100,500/350 x 0.15 = 43 drive-alone spaces

Retail Short-Term Demand
100,500/1,000 = 101 short-term spaces

Total Site Demand: 43 + 101 = 144 spaces

TABLE A-6

DAILY TRUCK STOP CALCULATIONS

•	Site C	500,000 sq. ft. Office	500 x 0.21 = 105
•	Site D	24 Units Senior Housing	0.03/1000 x 24 x 1,000 sq. ft. = 1
•	Site I	12,500 sq. ft. Retail 422 Dwelling Units	12.5 x 0.22 = 3 422 Dwelling Units x 0.03/1000 x 750 sq. ft. = 10 Total for Site I = 13
•	Site N	100,500 sq. ft. Commercial	100.5 x 0.22 = 22

Total Project: 105 + 1 + 13 + 22 = 141

APPENDIX B
AIR QUALITY

TABLE B-1

FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Primary Standard	Federal Secondary Standard	California Standard
Ozone	1-Hour	0.12 ppm	0.12 ppm	0.09 ppm
Carbon Monoxide	1-Hour	35.0 ppm	35.0 ppm	20.0 ppm
	8-Hour	9.0 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide	1-Hour	---	---	0.25 ppm
	Annual	0.053 ppm	0.053 ppm	---
Sulfur Dioxide	1-Hour	---	---	0.25 ppm
	3-Hour	---	0.5 ppm	---
	24-Hour	0.14 ppm	---	0.05 ppm
	Annual	0.03 ppm	---	---
PM_{10}	24-Hour	150 ug/m^3	150 ug/m^3	50 ug/m^3
	Annual	50 ug/m^3	---	30 ug/m^3
Lead	30 Day Avg.	---	---	1.5 ug/m^3
	Calendar Quarter	1.5 ug/m^3	1.5 ug/m^3	---

ppm = parts per million, ug/m^3 = micrograms per cubic meter.

Note: The Federal PM_{10} Annual Standard is based on the Arithmetic Mean and the State PM_{10} Annual Standard is based on the Geometric Mean.

Source: Bay Area Air Quality Management District.

TABLE B-2

HEALTH EFFECTS SUMMARY OF THE CRITERIA AIR POLLUTANTS

Air Pollutant	Adverse Effects
Ozone	o eye irritation o respiratory function impairment
Carbon Monoxide	o impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin o aggravation of cardiovascular disease o impairment of central nervous system function o fatigue, headache, confusion, dizziness o can be fatal in the case of very high concentrations in enclosed places
Nitrogen Dioxide	o risk of acute and chronic respiratory illness
Sulfur Dioxide	o aggravation of chronic obstruction lung disease o increased risk of acute and chronic respiratory illness
Total Suspended Particulate	o increased risk of chronic respiratory illness with long exposure o altered lung function in children o with SO_2, may produce acute illness
PM_{10}	o particulate matter 10 microns or less in size (PM_{10}) which may be inhaled, and possibly lodge in and/or irritate the lungs
Lead	o impairment of blood function and nerve construction o behavioral and learning problems in children

Source: Bay Area Air Quality Management District.

TABLE B-3

AIR POLLUTANT DATA SUMMARY

STATION: San Francisco - 10 Arkansas

Pollutant	1986	1987	1988
OZONE			
Highest 1-hour	0.07	0.09	0.09
Days > 0.10 ppm (1986-87)	0	0	N/A
Days > 0.09 ppm (1988)	N/A	N/A	0
CARBON MONOXIDE			
Highest 1-hour	9.0	9.0	9.0
Days > 20.0 ppm	0	0	0
Highest 8-hour mean	7.1	6.5	7.5
Days > 9.1 ppm	0	0	0
NITROGEN DIOXIDE			
Highest 1-hour	0.10	0.15	0.12
Days > 0.25 ppm	0	0	0
SULFUR DIOXIDE			
Highest 24-hour	0.03	0.03	0.03
Days > 0.05 ppm	0	0	0
PM_{10}:			
Highest 24-hour	78	65	107 (117)
Samples > 50 ug/m^3	5	4	2 (5)
Annual geometric mean	25.9	21.7	25.6 (23.1)
Year > 30 ug/m_3	No	No	No (No)

APPENDIX C
NOISE

APPENDIX C
FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL ACOUSTICS

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in decibels (dB) with 0 dB corresponding roughly to the threshold of hearing. Decibels and other technical terms are defined in Table C-1.

Most of the sounds which we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies, with each frequency differing in sound level. The intensities of each frequency add together to generate a sound. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound in accordance with a weighting that reflects the facts that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency mid-range. This is called "A" weighting, and the decibel level so measured is called the A-weighted sound level (dBA). In practice, the level of a sound source is conveniently measured using a sound level meter that includes an electrical filter corresponding to the A-weighting curve. Typical A-levels measured in the environment and in industry are shown in Table C-2 for different types of noise.

Although the A-weighted noise level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from distant sources which create a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of environmental noise, the statistical noise descriptors, L_{10}, L_{50}, and L_{90}, are commonly used. They are the A-weighted noise levels equaled or exceeded during 10%, 50%, and 90% of a stated time period. A single number descriptor called the L_{eq} is now also widely used. The L_{eq} is the average A-weighted noise level during a stated period of time.

TABLE C-1

TERM	DEFINITION
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter deemphasizes the very low and very dBA high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to levels in the evening from 7 p.m. to 10 p.m. and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m..
Day/Night Noise Level, L_{dn}	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m..
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

TABLE C-2

TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND INDUSTRY

At a Given Distance From Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Impression
	140		
Civil Defense Siren (100')	130		
			Pain Threshold
Jet Takeoff (200')	120		
	110	Rock Music Concert	
Pile Driver (50')	100		Very Loud
Ambulance Siren			
	90	Boiler Room	
Freight Cars (50')		Printing Press Plant	
Pneumatic Drill (50')	80	In Kitchen with Garbage Disposal Running	
Freeway (100')			
	70		Moderately Loud
Vacuum Cleaner (10')	60	Data Processing Center	
Department Store			
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')			
	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing
	0		

Source: Arnold P.G. Peterson and Ervin E. Gross, Jr., Handbook of Noise Measurement 1963.

TABLE C-3

LAND USE COMPATIBILITY STANDARDS: COMMUNITY NOISE

Land Use Category	50	55	60	65	70	75	80
Residential	a	a	b	b	c	d	d
Transient Lodging, Motels, Hotels	a	a	b	b	c	c	d
Schools, Libraries, Churches, Hospitals, Nursing Homes	a	a	b	b	c	c	d
Sports Areas, Outdoor Spectator Sports	a	a	b	b	c	d	d
Playgrounds, Neighborhood Parks	a	a	b	c	d	d	d
Golf Courses, Riding Stables, Water Recreation, Cemeteries	a	a	a	b	c	c	d
Office Buildings, Business Commercial and Professional	a	a	a	a	b	c	d
Industrial, Manufacturing, Utilities, Agriculture	a	a	a	a	b	c	c

KEY:

a. Normally Acceptable - land use is satisfactory, buildings need no special noise insulation.

b. Conditionally Acceptable - new construction should be undertaken only after acoustic analysis and installation of noise insulation. Conventional construction but with closed windows and fresh air supply systems or air conditioning will normally suffice.

c. Normally Unacceptable - new construction should be discouraged. If construction does proceed, acoustic analysis to determine the insulation needed is required.

d. Clearly Unacceptable - new construction should not be undertaken.

Source: Office of Noise Control, California Department of Health Services.

In determining the daily level of environmental noise, it is important to account for the difference in response of people to daytime and nighttime noises. During the nighttime, exterior background noises are generally lower than the daytime levels. However, most household noise also decreases at night and exterior noise becomes very noticeable. Further, most people sleep at night and are very sensitive to noise intrusion. To account for human sensitivity to nighttime noise levels, a descriptor, L_{dn} (day/night average sound level), was developed. The L_{dn} divides the 24-hour day into the daytime of 7:00 a.m. to 10:00 p.m. and the nighttime of 10:00 p.m. to 7:00 a.m. The nighttime noise level is weighted 10 dB higher than the daytime noise level. The Community Noise Equivalent Level (CNEL) is another 24-hour average which includes both an evening and nighttime weighting.

The effects of noise on people can be listed in three general categories:

- subjective effects of annoyance, nuisance, dissatisfaction
- interference with activities such as speech, sleep, learning
- physiological effects such as startling, hearing loss

The levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise in the last category. Unfortunately, there is as yet no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise. Table C-3 shows standards for land use noise compatibility.

Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of the existing environment to which one has adapted: the so-called "ambient". In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers.

With regard to increases in A-weighted noise level, knowledge of the following relationships will be helpful in understanding this report.

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- A 10 dB change is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response.

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